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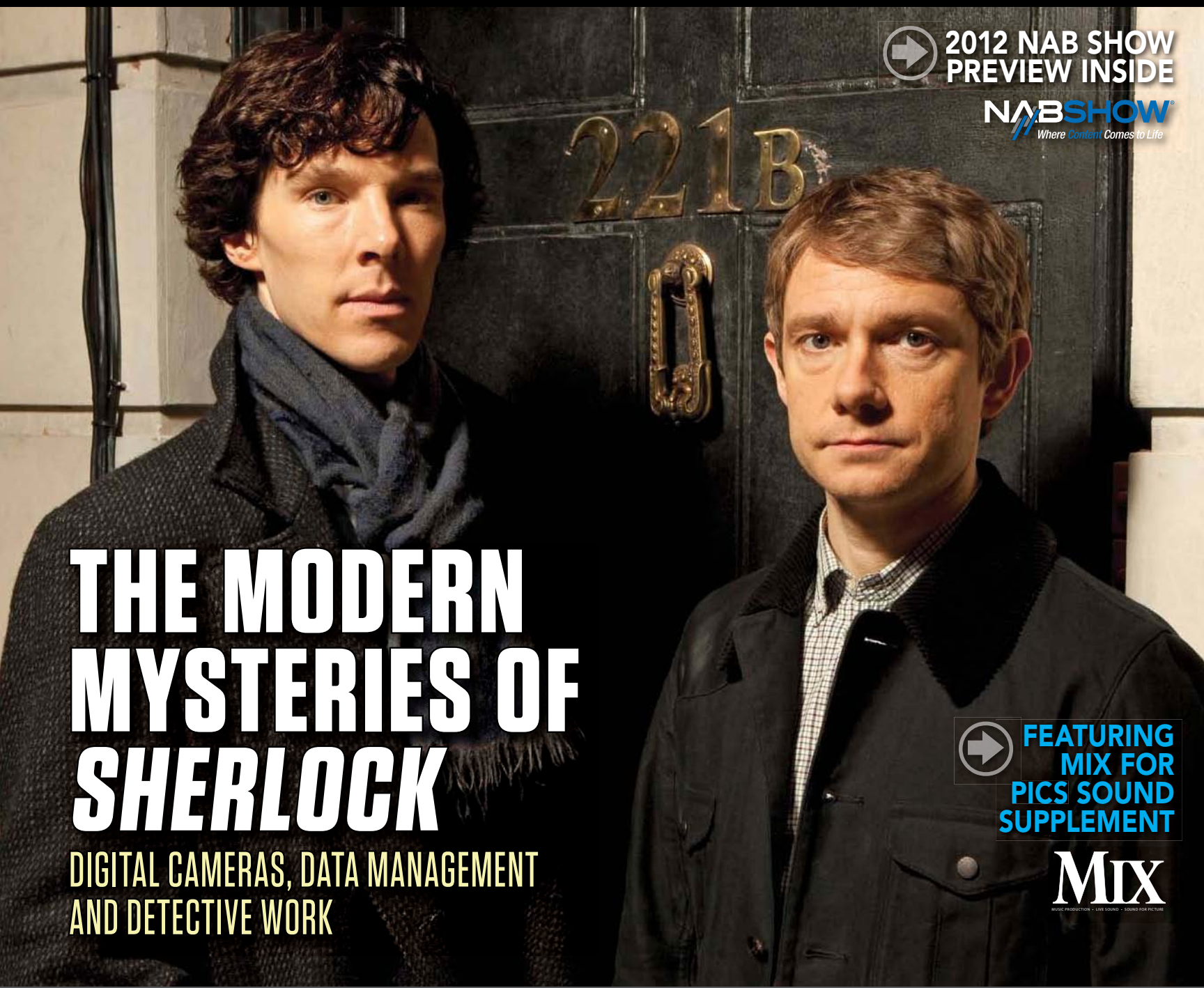

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EDITOR'S VIEW

TRIBAL INSTINCTS

In February, we co-hosted an event with Adobe in Washington, D.C., a few days before the release of the film *Act of Valor.* Along with HP, Canon, NVIDIA and our sister magazine *Government Video,* we presented a series of sessions focusing on the techniques and technologies used to shoot, edit and deliver the film. Cinematographer Shane Hurlbut, ASC, and Bandito Brothers CTO Jacob Rosenberg each discussed their experiences making *Act of Valor,* and the day concluded with popcorn and a screening of the film.

PHOTO BY JOHNNY BIVERA, VISUAL MEDIA ONE

Panel members Shane Hurlbut, ASC (*Act of Valor* cinematographer), Jacob Rosenberg (Bandito Brothers chief technology officer), Cristina Clapp (*Digital Video* editorial director) and Rich Harrington (CEO, RHED Pixel) answer questions during a pre-release screening of *Act of Valor* in Washington, D.C.

I had such a good time, and not only because Adobe set out trays and trays of cookies during each break. It was just so nice to see D.C. friends, colleagues and readers and spend a day with people interested in all the same things I am. I kept thinking (in between trips to the cookie buffet), "Now *these* are my people!"

There is really no substitute for human-to-human interaction—no number of e-mail exchanges or iChat sessions or phone calls can match an afternoon jabbering about sensors, DSLRs, firmware, processing speeds, multicam editing...and seriously, even metadata. Metadata!

That said, I'd like to ask that you keep our two upcoming Digital Video Expos in mind. Yes, you can absolutely learn about new tools at each show, get training and listen to experts—*and* you can meet up with the members of your community and exchange ideas and opinions. I'm working to build and strengthen the social and community aspects of these events, because as "connected" as we all are, you can't improve on a day spent with your colleagues, your people, your tribe.

Digital Video Expo East will be held in New York on June 20. Digital Video Expo West will be held in Los Angeles September 19-21. Both are free to attend, and you can register at www.dvexpo.com. So you should come.

Editorial Director
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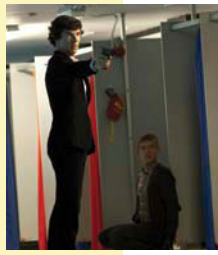

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UPDATE

MPC CREATIVE PRODUCES PROMOS FOR GRAMMY AWARDS

Visual effects and digital studio MPC Creative created a pair of visually rich promos for the Grammy Awards, one with Bon Iver and the other with Adele. The MPC team worked with agency TBWA\Chiat\Day on the branding, helping to develop the look and feel of the broader, four-spot campaign and handling the two spots' full production effort. This was a comprehensive project that included everything from practical photography to 2D and 3D animation to compositing.

BON IVER

Set to Bon Iver's "Holocene," the Bon Iver promo features a miniature world whose creation entailed constructing an intricate 40-inch set on a rotating platform. As production designer Gideon Webster designed the set, MPC worked on pre-vis to determine how to shoot the miniature in the appropriate scale, which lenses to use, and the distance and timing of the shoot.

MPC's Mark Gethin and Derek Hanson graded the practical portion of the promo, while CG artists developed particles that reacted to the Bon Iver music. A post grade ensured the CG and practical photography balanced.

ADELE

The Adele promo opens on a worm's-eye view of oversized CG raindrops falling to the beats of Adele's "Rolling in the Deep." The droplets burst into flames upon impact, releasing embers into the air that merge to form the singer's silhouette.

MPC Creative developed an editorial structure to guide the entire process while simultaneously working with designers to develop the promo's look, including the color palette, the character of the smoke and embers, and the movement of light.

online

For more about MPC's Grammy promos, visit www.dv.com/Apr2012

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Twitter Feed

- @VisionWrangler
  Doc "Bear 71" blurs the lines between narrative cinema, surveillance and interactive software — bit.ly/wN9nu9
- @TheReelist
  A look at "Silent House" and the similarities and differences (and effectiveness) of "found footage" vs. single take — ow.ly/9Bzhi
- @PromoNewsTV
  Jake Gyllenhaal plays a psychotic serial killer of East London hipsters in Daniel Wolfe's amazing new video — fb.me/18AfQWz1W
- @joetombarello
  Time-lapse stop-motion music video by indie band Wildlife Control — youtu.be/boGyFAYomBo
- @mashable
  Travel the world with these 10 time-lapse videos — on.mash.to/ybLVwa
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  Douglas Trumbull shares his thoughts on the science of movies — bit.ly/AvjirE
- @TheReelist
  An interview with "The Silicon Prairie," a group of scientists who created the special effects in "The Tree of Life" — ow.ly/9lNRC
- @openculture
  Free films by the Great Russian filmmaker Andrei Tarkovsky. Enough said — cultr.me/am2mpf
- @wired
  Shutter the thought: "Lytro" camera enables focusing photos after they've been snapped — bit.ly/ABjlzv

online

Digital Video's Twitter feed is at twitter.com/#!/DigitalVideomag

IF A TREE FALLS GETS FILM MASTER FINISHING

Postproduction facility Final Frame completed director Marshall Curry's documentary *If A Tree Falls: A Story of the Earth Liberation Front* using Image Systems' Nucoda Film Master finishing solution. The film's story of the rise and fall of an activist cell of the Earth Liberation Front is told using a complex combination of archival footage, digitally acquired material and graphical elements.

"The DVO image restoration and enhancement tools along with the Nucoda Film Master were invaluable in helping us achieve the look and images that Marshall was hoping to get," says Will Cox, senior colorist and founder of Final Frame. "It made a crucial contribution to the film and our ability to deliver a beautiful image."

AF100 Helps ARCN Count Sheep in Alaska

Michael Letzring, a visual media specialist for the National Parks Service, relies on the durability and flexibility of Panasonic's AG-AF100 in his video work in the Alaskan wilderness. In a recent project for the Arctic Network Inventory and Monitoring Program (ARCN), Letzring shot a series of videos chronicling the organization's efforts to track and monitor the population of Dall sheep.

"When shooting images of wild animals like Dall sheep, you don't get a whole lot of time to set up the shot," Letzring says. "We used the AF100 in diverse, unpredictable circumstances and got some stunning shots."

Letzring typically records to the camcorder's SDHC card when working in the field and edits the AVCHD material directly in Adobe Premiere Pro CS5.5.

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DOGS TAKE THE WHEEL IN DRIVE THRU'S SUBARU SPOTS

Production company Harvest Films and postproduction house Drive Thru collaborated on four Subaru spots that imagine the outdoor activities dogs might enjoy if they owned Subarus. The campaign launched during Animal Planet's Puppy Bowl broadcast on Super Bowl Sunday.

Harvest Films directors The Hoffman Brothers shot the dogs with three Panasonic P2 cameras. The Drive Thru team then culled the footage and completed rig removal and editorial finishing. Using Apple Final Cut Pro, Autodesk Smoke and Autodesk Flame, Drive Thru was able to edit, finish and deliver all of the spots and "behind-the-scenes" video for the web and broadcast in two weeks.

Sony Cameras Capture the Oscars

NEP Broadcasting, the production facilities provider for 84th Academy Awards held February 26, utilized 50 Sony HD cameras to capture the ceremony. NEP placed the cameras, including 15 HDC-2500s and 35 HDC-1500s, throughout the inside of the theater, as well as outside to record red-carpet arrivals, celebrity interviews and exterior shots.

"The Academy Awards ceremony is a very demanding production, with several 'shows within a show,'" explains George Hoover, senior vice president of engineering for NEP. "We've used Sony cameras on many high-profile events, so we were confident they would help deliver an outstanding telecast."

The 84th Academy Awards ceremony marks the second time Sony HD cameras have hit the red carpet for Hollywood's biggest night.

On the Creative Planet Network

BREAKTHRU BUILDS *THE FLYING MACHINE*

BreakThru Films completed the stereoscopic 3D feature *The Flying Machine,* which combines live action and animated sequences, using tools from Adobe. "Adobe Creative Suite Production Premium enabled us to overcome the technical difficulties of combining 3D live action with stop motion and also composite together many layers of animation and create visual effects and concept artwork," says Hugh Welchman, producer and managing director at BreakThru.

VIOLETA WENT TO HEAVEN GOES WITH SCRATCH

For the Chilean documentary *Violeta Went to Heaven (Violeta Se Fue a Los Cielos),* post facility Chilefilms used ASSIMILATE's SCRATCH for conforming, color grading and finishing. Cristian Aguilar, Chilefilms' business development director, says, "SCRATCH has become an integral tool in our daily workflow for countless films and projects."

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Go online to read more and view additional images and video: www.dv.com/Apr2012

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Trending Online

(Links at www.dv.com/Apr2012)

CHASING ICE: TIME-LAPSE VIDEOS EXPLORE CLIMATE CHANGE

In the documentary *Chasing Ice,* photographer James Balog deploys time-lapse cameras to capture a multi-year record of the world's glaciers and gather evidence about the existence of climate change. His beautiful videos compress years into seconds and show ancient mountains of ice in motion as they disappear at a breathtaking rate.

SHORT FILM "JOY RIDE" SHOT WITH NIKON D800

Produced by Nikon to demonstrate the video capabilities of its new D800 HDSLR camera, "Joy Ride" is a five-minute film directed by Sandro Miller that showcases high-speed action in low-light situations.

ROGER SUPPORTS *IT GETS BETTER* SPECIAL

Motion graphics production company ROGER united with snackaholic to create the show open and graphics package for *It Gets Better,* an MTV special documenting the struggles of LGBT teens. The ROGER team developed a dynamic mosaic built on the many real voices of the It Gets Better Project, a movement founded by columnist Dan Savage that provides support and hope to LGBT youth.

The job included transitions, bumpers and lower-thirds. ROGER's creative brief was to visually translate the concept of ItGetsBetter.org for the screen and communicate its message to a wider television audience in order to inspire advocacy.

ROGER was supplied with show footage and user-generated content from ItGetsBetter.org, including video messages from public supporters, celebrities and politicians. Conscious that the video elements were going to be supplied at varying and limited scale, ROGER developed its design accordingly, seamlessly integrating webcam and home video footage to achieve the right aesthetic quality for HD TV, while retaining the project's grassroots origins.

OK Go Teams with Beast for "Needing/Getting"

Editorial house Beast San Francisco completed work on the OK Go music video "Needing/Getting," which was created in partnership with Chevrolet. The video features the band driving a Chevy Sonic outfitted with retractable pneumatic arms designed to play the more than 1,000 instruments on a musical obstacle course installed on two miles of otherwise barren desert.

Damian Kulash Jr., OK Go lead singer and co-director of the video, says he enjoyed working with editor Doug Walker and his team at Beast. "They really understood the spirit of the piece: we aren't interested in slick filmmaking or sexy editing tricks, but rather in showing people what it was like to be there, and helping the audience viscerally understand the full course as a giant recording session."

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SPLICE HERE ORBITS *SPACE JUNK 3D*

Splice Here editor Carl Jacobs completed the 38-minute IMAX film *Space Junk 3D,* a documentary that tracks an expanding ring of man-made debris orbiting Earth. Fueling the story are stunning time-lapse sequences and dynamic images that transport viewers by wrapping them in star fields.

One of Jacobs' challenges was managing the volume of the film's assets—25 TB of 4K image files—that needed to be viewed and tracked frame by frame. "There were over 700,000 images created for this film," says the editor, "and we pored over every single one of them."

In addition to contributing offline editorial and being a digital hub for the film, Splice created the film's 3D end credits.

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Q&A

Spotlight:

CHRIS KENNEALLY

Director

Side by Side

Side by Side, a documentary directed by Chris Kenneally and produced by Keanu Reeves, explores the transition from traditional to digital filmmaking technology. The film's interviews with filmmakers including Martin Scorsese, James Cameron, Christopher Nolan, George Lucas and Steven Soderbergh illuminate technical and creative opportunities afforded by digital production and postproduction tools.

What interested you in this project?

Chris Kenneally: I was a postproduction supervisor on a Keanu Reeves feature in 2010, and Keanu was fascinated by the interaction of the photochemical and digital components of the film. *Side by Side* evolved from those talks, and his enthusiasm was instrumental in setting the interviews.

Once you'd conducted your interviews with all of the filmmakers, what was your process for post?

Sixteen19 [postproduction services complex] was the right place for *Side by Side.* Colorist Brian Boyd was a major asset in getting our disparate digital interviews, location footage and archival clips to match. All of our color correct needs were expertly addressed, and we were impressed with the results.

What information did you want to convey to viewers?

We began this project at a particularly advantageous time. We're right at the tipping point of the film/digital revolution/evolution. It was the ideal moment to get candid and extremely perceptive comments from the very filmmakers who are leading the transition into the next generation of movie production.

Director Chris Kenneally (left) and Sixteen19 colorist Brian Boyd

Dilated Pixels Delivers *Fringe* Effects

For a recent episode of Fox's *Fringe,* "The End of All Things," Dilated Pixels created and produced more than 60 VFX shots. The company's work included developing visuals representing the creation of the universe and a series of flashback images relating to the episode's storyline.

TNDV Goes Deep for PBS

Mobile production company TNDV recorded the second season of the PBS series *Bluegrass Underground,* capturing bluegrass music concerts in Cumberland Caverns, a series of underground caves in Tennessee. For each concert, TNDV's Aspiration, the company's 40' mobile production truck, parked near the cave and deployed an advanced SD/HD/3D production workflow that featured seven cameras, a full audio suite and lengthy cable runs. Amplifiers located near the stage fed directly to the truck over a digital audio line to generate a mixable audio signal for the TV program.

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SHERLOCK

modern mysteries, layered with inventive visuals

BY DAVID HEURING

Cinema history tells us that the first filmic portrayal of Sherlock Holmes was in a Mutoscope production of 1900. When the makers of *Sherlock* decided to update the durable, pipe-smoking detective for today's television audiences, they knew they'd need a fresh approach. The resulting *Masterpiece Mystery* series has been a smashing success—ratings for the BBC broadcasts have been terrific, and praise from the critics has been fulsome. The *Wall Street Journal* called *Sherlock, Season 1* "wonderfully weird," and BAFTA awarded the show its 2011 prize for best drama series.

The scripts are based on classic Arthur Conan Doyle tales but place the action in 21st century London. Brisk pacing and eye-catching visual techniques define the look. The cast includes Benedict Cumberbatch as Holmes, Martin Freeman as a deadpan Dr. John Watson, and Andrew Scott as the villainous Moriarty, who in this incarnation augments his treachery with computer expertise.

The first three 90-minute episodes comprising season one were photographed by Steve Lawes. For season two, director Paul McGuigan turned to Fabian Wagner.

"I was very keen to work on *Sherlock* because I thought the first season took a really innovative approach visually," he says. "The characters are so extreme, in a way, which allows you the freedom to do things you probably couldn't do on any other show. There was a style established in the first season that we took on, but we elaborated on that to some degree as the show evolved."

The main set, Holmes' apartment, is in Cardiff, Wales, and the filmmakers spend roughly five days there out of the 24 it takes to make each episode. The rest of the show is shot on practical locations, which often include London exteriors.

Benedict Cumberbatch as Sherlock Holmes
and Martin Freeman as Dr. Watson

Left: Holmes in the lab in "The Reichenbach Fall"

Right, top: Holmes (standing) and Dr. Watson in "A Scandal in Belgravia"

Right, bottom: Boom operator Stuart McCutcheon, Benedict Cumberbatch as Sherlock (seated), focus puller Jamie Phillips and Fabian Wagner (with camera)

A variety of photographic techniques are used to communicate Holmes' superior powers of observation. One such technique uses a series of as many as 40 still photographs to create a fast zoom-in. Wagner uses a Canon EOS 5D or 7D camera to capture these still images; the small HDSLRs are also used to catch moving images of interesting or tight angles during more "normal" scenes.

Another unusual technique involves inscribing words on camera filters. The result is that the words are seen projected onto the highlights of the final image. "I generally don't use soft filters because I like to use a lot of practicals and torches, and you can get an ugly tic from the way the filter glass breaks the light," Wagner says. "But for this trick, we made up ND filters with the words written in, and when we tested it, it worked."

High frame rates are another way to set images apart. A Vision Research Phantom camera is sometimes brought in to shoot at speeds of up to 500 frames per second. In a recent episode, the technique heightened tension in a scene where Holmes figures out that a safe contains a gun that will fire when the door is opened.

"It's tricky because you need so much more light," says Wagner of high frame rate shooting. "It takes time, especially when you're working on location, and that's difficult on our schedule. But for particular moments, it works."

For the majority of the show, Wagner's camera of choice is the ARRI ALEXA. The camera is set up to capture in 4:2:2 color space. "Season one had been done with the F35, but I pretty much use the ALEXA for everything I can," says Wagner. "When I came aboard, Paul had recently shot something with the ALEXA, and he was also really happy with it. In addition to the speed and the [light] sensitivity, I just think it's a great camera. It's simple and straightforward to use, it's well balanced for handholding, and loading and unloading the SxS cards takes seconds. It's a basic camera, but it produces great images."

The main lenses are Cooke primes, but the camera crew also carries a set of uncoated Zeiss Super Speeds, used when Wagner wants to add an interesting flare to the image. Sometimes he even adds a length of fishing wire between the lens and the camera as a low-tech way to create an anamorphic lens flare effect when the camera is aimed at a light source.

"When you have the opportunity to get a flawless image in the first place, it's easy to mess with it in interesting ways," says Wagner. "It's a high-definition image, which is a very hard image, so I'll do anything to soften it up a bit or give it a bit of different texture."

Most days there are two ALEXA bodies on the set, but McGuigan prefers to work with a single camera when possible. Wagner, on the other hand, doesn't mind lighting and blocking for two cameras. That's a switch—usually the director prefers using two cameras because it provides more flexibility in editing, while cinematographers like the specific and uncompromised lighting they can create for a single angle.

"I've done so much television that I've become pretty efficient with two cameras," Wagner says. "You've got no time and you have to shoot so much every day. I find two cameras quite useful."

The second season of *Sherlock* will be broadcast in North America on PBS on Sunday evenings in May 2012. **dv**

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JAY HOLBEN

PICTURING *SILENT HOUSE*

DSLR Video Goes Big Time, in Real Time

What is it *really* like to experience your worst nightmare? With crops of found-footage horror films popping up like dandelions—from *The Blair Witch Project* in 1999 to the *Paranormal Activity* series, *Quarantine*, *The Last Exorcism* and *Apollo 18* to *The Devil Inside* in 2012—it's refreshing to see a different take on the horror experience.

The directing team of Chris Kentis and Laura Lau bring to life *Silent House*, an American remake of the Uruguayan horror film *La Casa Muda*, which was inspired by true events. Like the original version from writer/director Gustavo Hernández, *Silent House* is a horror experience told in real time and in (seemingly) a single shot.

Alfred Hitchcock made the "long take" concept famous with his 1948 film *Rope*. Since then, only a handful of filmmakers have tried to duplicate the feat of showing an unedited real-time view of a story: Mike Figgis' *Timecode* presented four uninterrupted takes simultaneously on a dual split-screen; Aleksandr Sokurov's historical drama *Russkiy Kovcheg (Russian Ark)*, about Peter and Catherine the Great, was shot in an apparent single take; and Spiros Stathoulopoulos' *PVC-1* was a single-take drama about a pipe bomb placed around the neck of an extortion victim.

Kentis and Lau enter this small fraternity with *Silent House*, starring Elizabeth Olsen, Adam Trese and Eric Sheffer Stevens. John (Trese), his daughter Sarah (Olsen) and his brother Peter (Stevens) make a trip to their lakeside home, which is in a state of horrible disrepair. They are to spend this long weekend getting the house ready for renters.

The house has no electricity and all the windows have been boarded up, naturally, so the trio works inside by lanterns and flashlights. The large old mansion feels like a labyrinth of dark rooms and darker corners.

Left: Director of photography Igor Martinovic (with camera) and Elizabeth Olsen.
Right, top: 1st AC Ludovic Littee takes over camera operation for a dramatic escape from the house.
Right, bottom: Director of photography Igor Martinovic covers the action as Sarah (Elizabeth Olsen) discovers one of the many dark secrets of the house.

Elizabeth Olsen, carrying her own keylight, and Eric Sheffer Stevens

Sarah hears some unexplained noises; thus begins the tense real-time journey as she becomes convinced they aren't alone in the creepy old house.

Behind the camera for *Silent House* was director of photography Igor Martinovic (*Man on Wire, The Tillman Story, Red Riding: In the Year of Our Lord 1980, Nurse Jackie*). "I had spoken with the two directors [Kentis and Lau] previously about another project, and they came to me and said that they wanted to do a horror film and do it in one continuous shot," recalls Martinovic. "I thought, 'What a great opportunity!'

"Subjectivity was the core of our visual approach. From the outset it was clear to us that we had to make the movie through the main character's perspective," continues Martinovic. "Therefore, we decided that at the beginning of the film the framing would be very conventional. As the film progresses and Sarah's complex character keeps spiraling into darkness, we started playing more with off framing and negative framing to represent her state of mind—of being cornered, being trapped. The frame becomes her oppressor. We used the same approach to lighting: in the beginning the lighting scheme is based on actual light sources, and then slowly lighting becomes more stylized and not quite as motivated by the actual sources."

THE 12-MINUTE LIMIT

It may seem surprising for a film that intends to achieve a single, uninterrupted 88-minute take that the Canon EOS 5D Mk II, a camera with a 12-minute file record limit, was the production's camera of choice. The cinematographer explains, "In order to define what camera and format we were going to shoot on, we had to determine what was the most important factor in the decision. The concept here was to get the camera into as subjective an angle as possible, to really get into the perspective of the main character. At the time we shot the film, about a year and a half ago, the 5D Mk II was the only camera that could give us what we needed. It was very small, high quality, affordable, and we could get it into tight spaces, move easily with it, transfer it from one operator to another when needed—it provided us with the flexibility we required. Today, it's already a different game. There are three or four cameras on the market that I would have considered using for this project, but at that time, the 5D was the only real option that fit all the requirements."

The production had to embrace the 12-minute record limitation, very much like Alfred Hitchcock had to do with the just-over-10-minute takes per film magazine on *Rope*. The *Silent House* team made efforts to hide the transition points by moving in front of objects or whip-panning, hiding the edit however they could. The process allowed them to break the shooting into 12-minute takes and repeat a take, if necessary, before moving on to the next 12-minute segment.

"We rehearsed for two and a half weeks," explains Martinovic. "These were full rehearsals

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Above: Director of photography Igor Martinovic with Canon EOS 5D Mk II camera, Redrock Micro handheld rig and smallHD monitor
Below: *Silent Hill* co-directors Chris Kentis and Laura Lau

with all the actors, camera and the entire crew. We would record the rehearsals and then replay and analyze them. As you can imagine, the choreography was very complex. The shooting itself was done over three weeks. The tricky part was that while we were shooting, things would change in the house—certain props would have to be moved behind the camera, some special effects rigged while camera was rolling in another room, a lot of logistics. We were lucky that most of the time we were in one location—the house—although some of the movie takes place near the water and outside of the house."

ONE TAKE, INSIDE AND OUT

As the horrors mount, Sarah gets proof that her family is not alone in the house. Her father has been attacked and lies bleeding on the floor upstairs. Sarah finds all of the doors locked, the windows barred—her last hope is to escape through the basement.

In a single take with no cuts, the camera follows Sarah out through the basement and over to a desolate road, where she encounters her uncle driving back from an errand. Sarah gets into the car and goes back to the house, waits for a time while Uncle Peter goes in with a handgun to rescue his brother, and then goes into the house herself.

The shot started with camera assistant Ludovic Littee operating the camera in the basement and running with Olsen through the woods surrounding the house. When Olsen gets into the car, Littee handed the camera off to Martinovic, who was waiting in the back seat. Martinovic then drove with the actors—with Littee chasing quickly behind—back to the house. When Eric Sheffer Stevens, playing Olsen's uncle, gets out of the car to go into the house and rescue his brother, Littee quietly slipped into his seat and Martinovic handed the camera back to his assistant for coverage from the front seat. When Olsen finally makes her run for the house, Littee handed the camera back to Martinovic, who continued camera operation back into the house in one continuous take. It is a feat of camera logistics that few filmmakers have attempted.

TECHNICAL ASSISTANCE

Helping the cinematographer and his assistant to accomplish these incredible balletic feats of operation was a handheld rig from Redrock Micro. A prototype on-board monitor from smallHD allowed the cinematographer to monitor 720p from the 5D Mk II; a feed-through of that HD signal went into a wireless transmitter in a backpack to feed the video village.

Camera assistant Littee used this wireless 720p signal and a Preston wireless follow focus system to pull focus remotely while the cinematographer ventured through the house.

Martinovic shot primarily with a Zeiss CP.2 28mm prime lens, with support from the 21mm prime. The 5D was set at 320 ISO and the cinematographer shot wide open at T2.1 for the most part.

"We were wide open all the time," Martinovic submits. "We wanted to have that shallow depth of field for the duration of the movie. Shallow depth of field is a lot like darkness—you never know what is lurking behind you, out of focus. We used both darkness and depth of field to enhance the horror element of the story."

Since the film starts outside in daylight, the cinematographer had to devise a system that would enable a single camera to move from daylight to inside a very dark house in a single shot. He used two circular polarizers that, when rotated against each other, create a variable ND filter, allowing him to compensate for the lighting difference between exterior and interior locations.

The cinematographer treated the house's interior like a set on a soundstage. Lighting was rigged into the ceiling where possible or handheld by the actors in the shot. Lighting rigged overhead was fed into dimmers so that it could be controlled as the camera and actors moved throughout the house. Lighting cues were worked out in the two weeks of rehearsals. Actors, effects, camera and lighting were choreographed into a precision machine.

"Since there was no editing involved, the real challenge was to create pacing and rhythm while shooting the film," Martinovic continues. "You're doing your editing in-camera using camera movement and actor's blocking to control the rhythm. There was no luxury of speeding up or slowing down the pacing with clever editing—everything had to be decided in advance.

"Technology is developing so quickly these days, it's very exciting. All this new technology is giving us an ever-expanding array of tools that allows us to explore new directions. Things that were impossible to do years ago are a lot easier to accomplish today, and that opens up new doors to more creative storytelling." **dv**

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JENNIFER WOLFE

IN TAHRIR SQUARE

HBO Presents An Immersive, Intimate Recounting of Egypt's Revolution

PHOTO BY MATTHEW O'NEILL/HBO

Jon Alpert, front right, films protesters in Egypt.

HBO's *In Tahrir Square: 18 Days of Egypt's Unfinished Revolution*, directed by award-winning documentary filmmakers Jon Alpert and Matthew O'Neill, follows what began as a peaceful demonstration that quickly grew into the revolutionary movement that would force the resignation of Egyptian President Hosni Mubarak.

On January 25, 2011, mobilized in part by social media and bolstered by similar protests in other Arab countries, thousands of Egyptians gathered in Cairo's Tahrir Square to demand the end to Mubarak's three-decade rule. Hundreds of thousands of Egyptians ultimately participated in the protests at Tahrir Square, with nearly 850 killed. On February 11, the 18th day, more than a million Egyptians joined the revolution in the square and witnessed the surprise announcement that Mubarak would step down.

Watching *In Tahrir Square* is to become immersed in the world of the protesters, from the peaceful first days of the uprising through the deadly battles between pro-

Mubarak forces and anti-Mubarak demonstrators. The film shadows Sharif Abdel Kouddous, a young Egyptian-American journalist who leads cameras into Tahrir Square and provides insightful accounts of those tense days, his tweets and live reporting attracting international attention.

Alpert, co-executive director of New York's Downtown Community Television Center (DCTVC), traveled to Cairo with O'Neill and producer Jackie Soohen to document the uprising, bringing a Sony PMW-EX3 camera to capture footage and a Sony Handycam HDR-CX550V for backup.

"When our executive producer, Sheila Nevins, asked 'Egypt?' we immediately started packing our bags," Alpert recounts. "The EX3 ended up serving mainly as a decoy. Because the government was doing whatever it could to restrict media, we anticipated that our cameras would be confiscated at customs. The plan was to allow customs officials to take the big-chip camera while we slipped the small prosumer camera past them. I had to spend the next five days performing Herculean tasks to get EX3 released from customs, but it was more than worth it."

A fan of the Handycam's versatility, Alpert has used it in a variety of situations and conditions. "That little camera is really capable of keeping up with the big boys," he insists. "We've used it in especially challenging wartime situations and it's been great. We can even pair it with a Zaxcom to record audio if we need to. This little camera is your friend. One of our collaborators had a big-chip SLR camera, and it makes gorgeous pictures, but only as long as the subject and camera don't change their relationship to each other. In the hustle and bustle of revolutionary times, that's not always possible.

"Ninety-nine percent of the pictures we recorded with the big-chip camera were out of focus, and

The production team for HBO's *In Tahrir Square:* (from left) Jacquie Soohen, Matt O'Neill, Sharif Abdel Kouddous and Jon Alpert pictured with protesters in Tahrir Square

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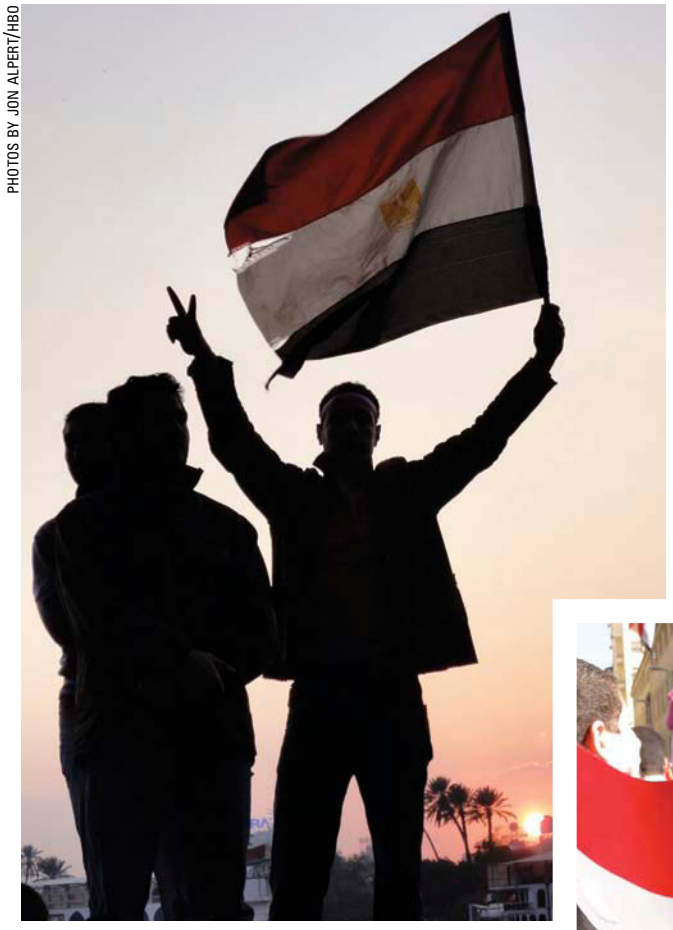

of the one percent that were in focus, 99 percent of those had bad audio," Alpert continues. "The little camera is a friendlier, more forgiving tool that allowed us to cast a wider net than its big-chip cousins. If the revolution had taken place in the studio, the big-chip camera would have been fine, but on the street with a million people and projectiles and tear gas, it was as much of a foe as Mubarak's thugs on camelback."

Facing Mubarak's thugs became all in a day's work for the documentary filmmaking team during the 21 days of production. "I've filmed about a dozen revolutions," Alpert says. "There will always be circumstances that might get out of control, and there is always danger to your equipment. There were so many brave people recording these events and bearing witness. You protect your equipment before you protect yourself—it's just how we are. You figure out how to shoot, analyze each situation for risks, both personally and to your equipment, and you figure out how to shoot it in such a way that your equipment will survive and be there for you the next day."

Alpert also employed a variety of strategies to keep footage safe once it had been acquired. "Every single night you have to be very careful to download and digitize material because you're wiping the cards for reuse the next day," Alpert explains. "This is also your opportunity to make duplicates and hide materials for later in case there are any problems. We're not going to give away all our tricks, but we found ways to duplicate, hide and protect our media so it wouldn't fall into the wrong hands. It's very important for filmmakers to have a strategy before they actually go out into the field, and to follow that strategy—never get lulled into thinking 'this is not that bad,' because it can get bad really fast." **dv**

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JON SILBERG

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In 2001, Canadian wildlife conservation officers captured a 3-year-old female grizzly bear, tagged her with GPS surveillance equipment and returned her to the wilds of Alberta's Banff National Park in the Canadian Rockies. Using the data they acquired from their unwitting participant (dubbed Bear 71), the officers could track her movements over the subsequent eight years and document how the ever-encroaching human presence in the bear's natural habitat affected the animal's behavior. Meanwhile, park rangers also positioned motion-activated still cameras throughout the park to capture scenes no photographer could ever hope to shoot.

Two years ago, Leanne Allison and Jeremy Mendes went to Canada's National Film Board (NFB) with the idea of turning the GPS data and this trove of about a million photographs into an interactive documentary experience.

"We sat on the material for about six months," says NFB executive producer Loc Dao, who had been charged with developing innovative storytelling methods based on new media technology. "Something about the data fascinated us, [seeing] the movement patterns of Bear 71 around all sorts of factors that could hurt or kill her—a highway, trains or just encounters with humans on hiking trails."

Top, left: Graphic representation of Bear 71's territory
Top, right: Constant video surveillance, satellite tracking, radio collars ... sometimes it's hard to tell where the wired world ends and the wild one begins.
Bottom: Bear 71 says in the narrative, "Every bear knows the tracks are dangerous. But sometimes we forget."

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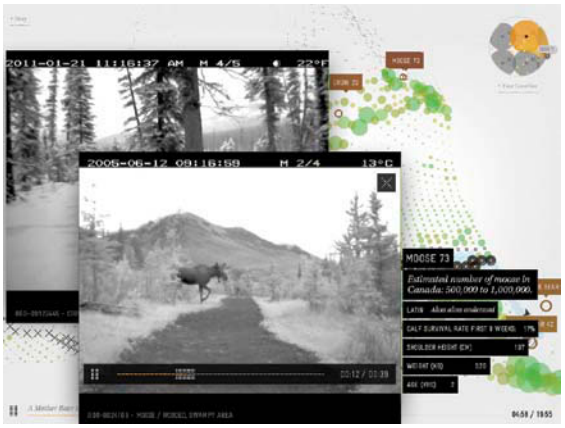


"There are 15 remote-sensing cameras in my home range, plus infrared counters, and barbed-wire snags to collect my hair. I suppose it's like most of the surveillance that goes on today—it's partly there to protect you, and partly to protect everybody else from you."

It would be crucial to come to this documentary project with a clear sense of how the narrative concept and enabling technology would support and enhance each other. The producers went over ideas about how to present the data and images in a way that would amplify the story.

Through this development work, the group hit on the larger concept of surveillance itself—how we are all being observed, just as Bear 71 and the National Park fauna had been, whenever we're picked up by a security camera in a convenience store or at an ATM.

As they worked through the ideas, they came up with the notion of using both a linear, audio-based narrative that would provide structure and a graphic representation of Bear 71's territory that users could explore interactively. While listening to the audio narrative, users customize their experience by clicking on the map to gather information and see stills and video recorded at particular coordinates.

The audio piece would develop into a 20-minute narration scripted from the POV of the titular bear (with the conceit, of course, that the bear has a somewhat anthropomorphic perspective on the world and the ability to express herself in English). Actress Mia Kirshner (*The Vampire Diaries*, *24*, *The L Word*) provided the voice.

The technical heavy lifting for the project was handed off to Toronto digital production studio Jam3, which handled much of the project's design and made sure the ambitious concepts were technically feasible. "They had the story of the bear and a million stills from the park and videos of certain events like the bear being captured and tagged," says Pablo Vio, a partner and creative director at Jam3. "One of the challenges was to have the site do all the things they wanted without making it so abstract that people couldn't get it.

"We went through a rigorous design process. What were the people listening to? What were they looking at when the narration was on? How many different things could they click on while the narration was going? We had to make sure that we had media everywhere on the grid so people would always have a whole bunch of buttons to click on. The idea was that you never get bored and the narration keeps you emotionally tied to the experience."

He notes that the project, which was built in Flash, required a 3D engine to map out the layers and graphics all at once so the user's experience would not be slowed by the technology. In the 16 months since Jam3 embarked on the project, Adobe has released its own Flash 3D engine, but no such tool existed when *Bear 71* was being built, so Jam3's Mikko Haapoja wrote new code and created a 3D engine to meet *Bear 71's* requirements.

The Jam3 team built a custom multi-user server to allow those on the Bear 71 site to see one another's webcam images, intensifying the overarching surveillance theme. Vio says, "We did a lot of tests to see how many people we could have on the site at the same time, how many videos could we be watching of other people at the same time. The project itself was very technically driven and a lot of the experience was based on being able to come up with ways to provide these technical capabilities."

The NFB's Dao adds that the experience continues in other forms. A larger version of the experience with extended functionality was a hit at Sundance and continues to travel throughout the country. His team maintains a *Bear 71* Tumblr site that follows reactions to the project and the ongoing debates about subjects related to the themes of *Bear 71*.

"We don't believe in using these other media as just marketing tools," says Dao. "We try to integrate them into the actual story and narrative. When you're done with the *Bear 71* doc, there's a link to the Tumblr so you have something to follow up on."

Vio recalls the moment when he knew that this project, with its unique design and approach to storytelling, was more than just a technical achievement. "We finally went live," he says, "and I went onto the site and I saw a man in his 60s or 70s who was watching it and crying," he recalls. "It was a beautiful moment to see that this incredibly complicated web site not only reached someone of that age group, but that he was so moved by the story. For us to be able to see that happening was quite special." **dv**

JOY ZACCARIA

X: THE UNHEARD MUSIC

Revisiting and Revitalizing the Punk Rock Documentary

The special edition DVD and Blu-ray release of *X: The Unheard Music* came out in December in honor of the punk rockumentary's 25th anniversary. Originally released in 1986, *The Unheard Music* follows the evolution of the band X, which burst on the Los Angeles underground music scene in the late 1970s.

For writer/director W.T. Morgan and his team, the five years spent making the film in the early 1980s celebrated their love of film and cultural history. *The Unheard Music* combines live performance footage of the band and interviews with original band members John Doe, Exene Cervenka, Billy Zoom and D.J. Bonebrake with surreal music videos and montages of newsreel footage and vintage television commercials to help illustrate X's uphill struggle against the music industry.

The film's aesthetic was inspired in part by the attempt to represent 100 years of film styles. "We used archival footage as original context as much as possible against the current footage at the time," says Morgan. "One thing I like about using archival footage is the presence of the past. Footage from 60 or 70 years ago has its own consciousness that I wanted to preserve and bring along to my film so that old and new were dancing off each other."

The transfer to high-def for the Blu-ray release presented some interesting challenges for Morgan. "We noticed immediately in doing the transfer to HD that every flaw in the original material was hanging out there," says Morgan. "In the transfer, I tried to avoid the flatness of some of the video, but I wanted to keep some of the raw textures in there along with the scratches and dirt."

For the HD transfer, Morgan went back to the film's 35mm color timed interpositive. "That was one of the ironies," says Morgan. "Back in the original release, we spent more on the blow-up and final mix than we did in five years of making the movie. That made a big difference for the transfer."

X: The Unheard Music premiered at the Sundance Film Festival in 1986; in 2007 Sundance rescreened the film and added it to the Sundance Collection, which is what prompted Morgan to produce the 25th anniversary silver edition. Watching the film at Sundance in 2007 with a mixed audience—some people familiar with the '80s punk rock scene, some not—was a revelation for Morgan. "One young guy came up to me after the Q&A and asked why I used all that footage of Reagan," says Morgan. "He thought this was a brand new film!" **dv**

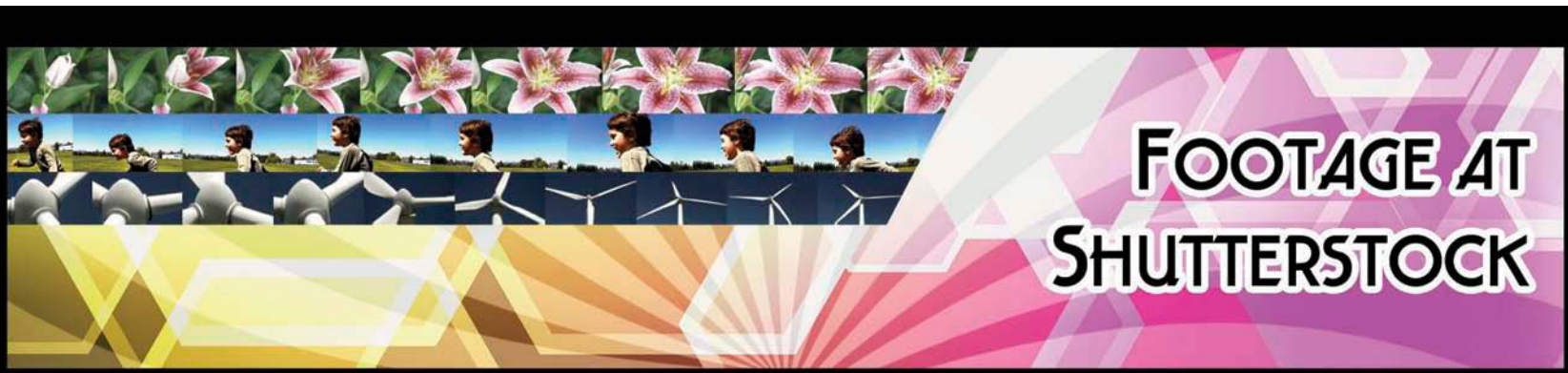
PHOTO BY MICHAEL HYATT

PHOTO BY SUZANNE TENNER

PHOTO BY GARY LEONARD

Top: Members of X: (from left) guitarist Billy Zoom, singer Exene Cervenka, drummer D.J. Bonebrake and bassist John Doe

Middle: Writer/director W.T. Morgan



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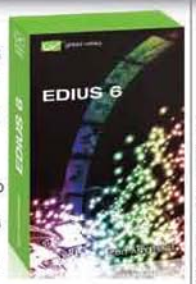

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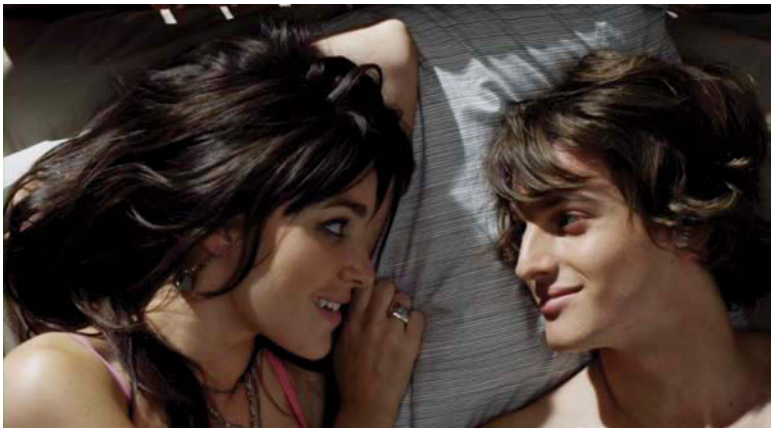

Top: (From left) Stacey (Elisabeth Hower), Eric (Jordan Carlos), Tina (Kim Shaw) and Jason (Peter Vack)
Middle and bottom: One-night-stand Jane steals Jason's heart, and his pants.

My Pants Back, which similarly features a group of 20-somethings (this time in New York) and which is shot with a lean production budget and ambitious three-day-per-episode schedule.

Liman shot the pilot last year using then-new RED EPIC cameras. When MTV picked up the series, he turned cinematography duties over to Tom Houghton, ASC (*Rescue Me, 30 Rock*).

Houghton is particularly pleased with the camera's low-light capability. He generally works at its native speed of EI 800 and reports that he can go to 1600 in low light (or to get a little extra stop to increase depth of field) without paying a prohibitive price in noise or other forms of image degradation. This flexibility, as well as the camera's size, helps him keep to the show's overall fast-paced approach to production. "We can shoot under street lights or go into locations without having to bring in a lot of lights," the cinematographer reports. "I do relatively little lighting for the show. Even when we shoot on a stage, I just want to bring the minimum number of lights."

Much of the action takes place inside the characters' apartments, which the production team built on stages in Greenpoint, Brooklyn. The sets are rather small and cramped by design. They don't offer the luxury of pulling out walls for lights or cameras. The rooms have canvas ceilings that can appear in some shots or be pulled away to sneak in a light or two for others, but the crew must otherwise approach the space as they would a real apartment. Again, a base speed of 800 helps. "The biggest unit we generally use is a 650 watt tungsten light," Houghton says. "More often smaller-wattage Peppers are the major instruments. And then we'll supplement with some Kino Flos or China balls and well placed Leekos for a shaft of light or some bounce where we can. We're able to light the backings outside more traditionally, but inside rooms there are very few places you can put lights."

Houghton frequently uses a 1' x 1' battery-powered LED unit as a last bit of lighting punctuation. "You really have to see how the rehearsals come together before you know the optimum place for a light," Houghton explains. "Since there's no time to stop and set a light, it's great to be able to pop in this LED at the last moment. You don't need a cable. Sometimes I'll use it right on the camera or we'll mount it on a wall. It's certainly not going on the grid because there is no grid!"

A local deli serves as a common meeting place for the characters. The production made use of a real deli and shot all the scenes that take place there back to back for efficiency. "I did very little to light the space," Houghton says. "We added maybe two lights. We could have done something to make it more green and garish, but we wanted it to look more natural, friendlier."

The EPIC's small footprint helps operators John Delgado and Chris Hall get into some tight spaces, although by the time it's decked out with Angenieux zooms, ARRI remote follow-focus unit, battery, Modulus 5000 wireless transmitter and an assortment of brackets, it's not exactly the tiny box it looks like on a trade show floor. "It starts out like a little Hasselblad," he says, comparing the EPIC to the classic medium format SLR, "but we put a lot of stuff on it."

The mandate for the show was no cables, no video village, DIT Eric Camp reports. He uses the wireless transmitter to convert the signal to standard def and deliver it to the episode director's handheld monitor—sometimes to a couple of other SD displays, but that's the extent of it. There is no high-def image sent to any monitor or scope until Camp plays back the material at his workstation.

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Houghton uses a traditional incident meter to light and determine exposure, sometimes using his Canon EOS 5D to grab stills. Except for occasionally using the exposure tools on the EPIC, he relies on his years of shooting experience and his understanding of the EPIC sensor's dynamic range to make sure his exposures are where they need to be.

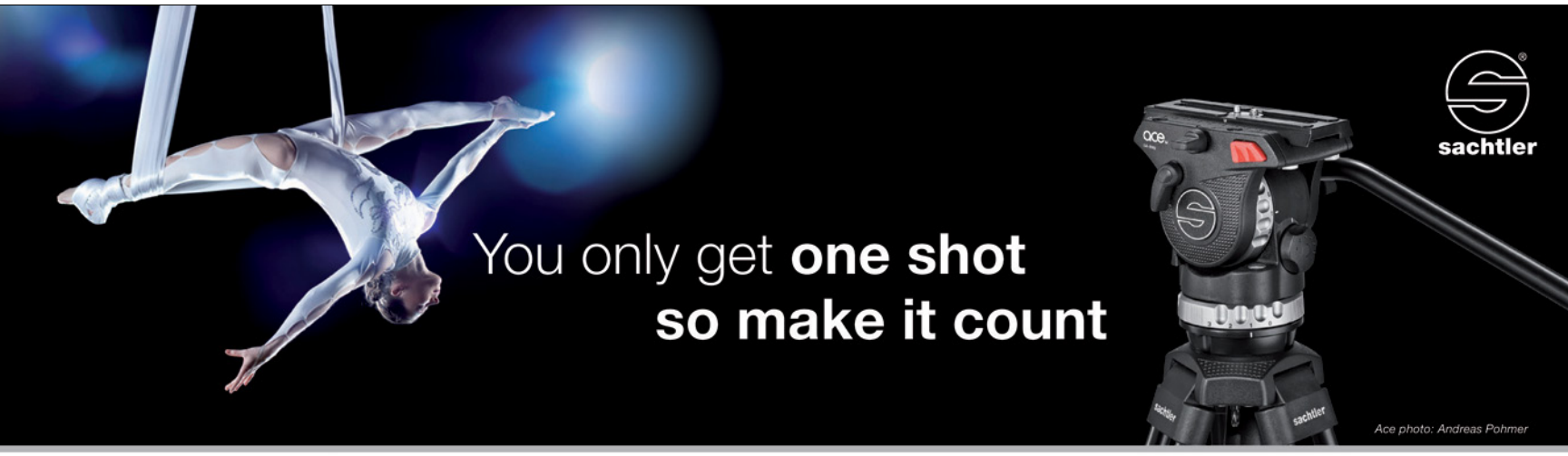
Camp's DIT workstation consists of a fast tower computer, a RED ROCKET card, a 32 TB RAID, an HD monitor and an assortment of additional drives. Camp uses REDCINE-X software to check footage and to apply a light grade (via non-destructive metadata) to the images for dailies. (Final grading is done by Milan Boncich at Offhollywood in New York's SoHo.)

The EPIC sensors were really put to the test for an upcoming episode directed by Liman in which the city experiences a blackout. Houghton explains that the director brought a lot of his own ideas about cinematography to discussions about how to shoot at night when most of the light sources are eliminated.

"It's tricky," Houghton offers. "What is a blackout? What's providing the light we need to see something on the screen? We had people lit by their iPhones or by headlights from cars and buses. It's really a conceit that you can see as much as you can, but I think it worked well. And we needed some light even for areas that go into blackness. If you put some information onto the 'negative,' you can adjust it and make it a little lighter or completely black in post, but if there's nothing there at all, you can't do anything with it later."

For Houghton, the key is to embrace the show's work method and keep the cinematography as simple as possible without sacrificing his or Liman and the directors' aesthetic expectations. Much of what he might do for a feature or a TV show with a more traditional shooting pace can be counterproductive on *Pants*. For location shoots, Houghton might normally bring in a lot of lights to maintain consistency throughout the day, "but at the speed we were shooting [*Pants*], you don't really have to think about matching morning light to afternoon light because we'll be long gone by the afternoon." **dv**

Cinematographer Tom Houghton, ASC



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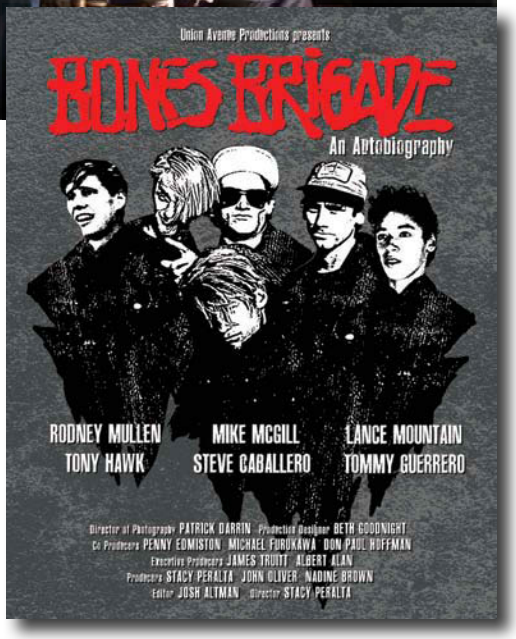

The Bones Brigade was *the* skateboarding team of the 1980s—a profoundly talented group of outsiders who became the most popular skateboarding team in history. Filmmaker and legendary skateboarder Stacy Peralta documented the team's rise and implosion in his award-winning 2001 film *Dogtown and Z-Boys*, which chronicled the rise of the modern skateboarding industry.

Peralta's newest film, the emotionally charged *Bones Brigade: An Autobiography*, picks up the story where *Dogtown* left off, using archival footage and moving first-person accounts from Brigade members Steve Caballero, Tommy Guerrero, Tony Hawk, Mike McGill, Lance Mountain and Rodney Mullen, among others, to chronicle the personal histories of the Z-Boys and the origins of the Bones Brigade.

Concerned about making simply another version of *Dogtown*, Peralta was initially resistant to the idea of *Bones Brigade* until the Z-Boys themselves prevailed on him to tell their story. To avoid repeating the gritty, black-and-white back-alley look of *Dogtown*, Peralta and his crew built a lavish, beautifully lit interior set for interviews, which were shot with the ARRI ALEXA camera. Motion control photos, behind-the-scenes footage and time-lapse sequences

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Top, left: Archive photo of Stacy Peralta filming
Top, right: Tony Hawk
Left: Rodney Mullen

were captured using a Sony PMW-EX1.

"I had shot a number of commercials last year using the ALEXA and it really blew my mind. I couldn't wait to use it on a feature-length project," Peralta says about his choice of camera. "The ALEXA is simple to use, and I love how it interprets light and the depth of field that can be achieved with it. If you don't have all the lighting equipment you want, you can still get a pretty fantastic shot. I was really, really pleased with it."

Rounding out the nearly 150 hours of interview footage were 450 hours of archival footage in a variety of formats. "We received all sorts of media, ranging from 8mm and 16mm to Betacam SP, 3/4" U-matic and VHS, along with newer footage on DV and digital HD media," says assistant editor John Oliver, who was responsible for organizing the nearly 600 hours of footage for the project. "We had nearly every NTSC format you can think of."

Peralta realized that he was too close to the subject to handle editing on his own, so he turned to editor Joshua Altman (*No Room for Rock Stars*) to help shape the footage into a story. "Before we started cutting, I went through all the footage, including about 2,000 motion-control photos, and created at least 50 different bins," Peralta relates. "Josh and I went through the bins together so I could give him an idea about what was what, with him taking notes along the way."

Interview footage and motion control photos were transcoded into Apple Final Cut Pro as ProRes 422 (HQ) at 23.98 fps, while archival footage, due to storage limitations, was ingested into Final Cut Pro as QuickTime 10-bit uncompressed 4:2:2 at 29.97 fps. The editing team used three 24 TB RAID drives to manage the nearly 26 TB of digital media, cloning the three drives to serve as backups and employing FireWire drives for the overflow.

"Working from the interview transcripts, Stacy began scripting sequences, handing off the scripts for me to edit into Final Cut Pro," Oliver explains. "Once Josh came on board, it was easy to get him up to speed because we had many sequences already cut and the footage was so well organized. I wanted cloned drives so that I could continue adding footage to one of the drives while Josh was using the other to edit. The third was for added backup and peace of mind. Once I got to a point where I had more new content to add to the project, I would drive to Venice and swap drives with Josh. He would continue cutting and I would update the drive he had been using. With Josh in Venice, Stacy in Santa Monica and me in Santa Barbara, it was a really effective way to have us all pushing forward to meet our deadline while working in different locations."

"You can't put a price on organization when it comes to the editing world," Peralta adds. "All three of us were working in separate locations with a lot of distance between us, but it worked out beautifully."

Working under an extremely limited budget, Peralta credits the affordability of new filmmaking tools with making *Bones Brigade* a reality. "This was the lowest budget I had ever worked with," Peralta says. "Years ago we would have had to use a Teranex to handle the archival footage, and that would have been costly enough to kill the project right there. Final Cut Pro handles all of that now. And although we shot interviews with a conventional crew, essentially the three of us—Josh, John and I—made this film. It's amazing what you can do with the tools that are now available." **dv**

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WAR HORSE

Gary Rydstrom Forges the Sound for Spielberg's Spectacle

Steven Spielberg's *War Horse* is a classic Hollywood epic, a throwback to a different era of filmmaking. "When I saw it, I was amazed how old-fashioned it felt, in a good way," comments Gary Rydstrom, who served as co-supervising sound editor (with Richard Hymns), sound designer and effects re-recording mixer for the film. "This is telling a very big story in an episodic way. It's traveling long distances and meeting a lot of different characters. It has a David Lean grandness.

"It's a story about humanity surviving in the midst of war, told through how people relate to horses, really," he continues. "It has a beauty to it that's fitting and also a real emotional power. I had never worked on a movie quite like this. For me, it felt like I was able to get into a time machine and do a movie in 1960, but with Pro Tools and digital consoles."

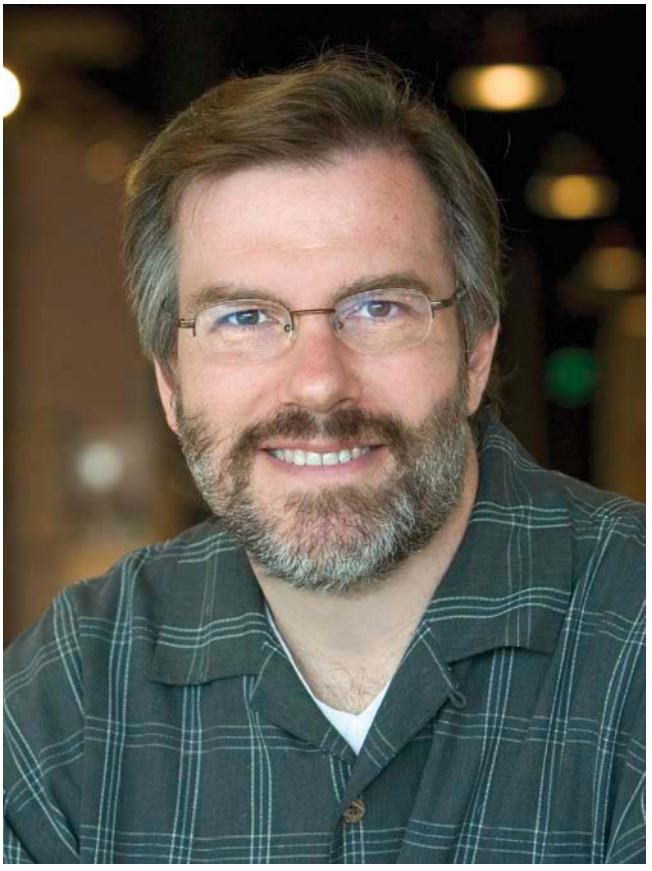
Rydstrom got the call to work on *War Horse* a few months before the relatively short two-month shoot in England in the fall of 2010. "We did a lot of our collecting of sounds based on the script—luckily, the script had a good sense of what the movie would be and a great sense of tone.

"We recorded all over the place and we had a lot of people doing it," Rydstrom continues. "E.J. Holowicki did a lot. Nia Hansen was a field recordist for us on this and happens to own horses and know horses really well. We recorded a ton of stuff—a lot of it, not surprisingly, was horses, and every type of horse, including a foal being born, which is pretty amazing. We recorded race horses, putting mics with jockeys on the horses because we had cavalry charges [in the film]. Nia went to a vet hospital at U.C. Davis and recorded horses coming out of anesthesia, sick horses, horses with tracheostomies. The sad truth is this often is a movie about horses struggling, so we had to find ways of capturing

BLAIR JACKSON

Below, left: Sabres drawn, the British cavalry charges toward a German encampment.
Bottom, right: Capt. Nicholls (Tom Hiddleston), mounted on Joey, his sabre resting on his shoulder, prepares to attack a German encampment.
Below, right: Gary Rydstrom

PHOTO BY DAVID APPLEBY/DREAMWORKS II DISTRIBUTION CO.



that without making them actually go through what it looks like they're going through."

There are two main horse characters in the film: We follow Joey from his birth on a farm in southwest England through his "conscription" into the British Army on the eve of World War I (hence the title); and the larger black horse Topthorn figures into the war part of the story. Rydstrom says it was important to give each horse his own sonic personality, so great care was taken in assigning vocalizations, breathing and movement sounds to what are, in a sense, the film's main characters.

PHOTO BY ANDREW COOPER/DREAMWORKS II DISTRIBUTION CO.

Capt. Nicholls and the British army conscript Joey.

"When I first talked with Spielberg," Rydstrom offers, "I most wanted him to explain his idea of Joey's character because we treat him like a real actor. He said that Joey is noble, so even when Joey's in pain, we still wanted to make him somehow sound noble. The movie is full of opportunities to let the horses 'act.' All of the vocals and sounds of Joey for the whole movie were cut by Terry Eckton, who's a longtime Northern California sound editor who specializes in creature vocals.

Horse foley—encompassing hoof steps, body swishes and shudders, and tail shakes—was critical in providing depth and dimension to the horses. Denise Thorpe and Jana Vance performed the foley, which was supervised by Luke Dunn Gielmuda, recorded by Sean England and edited by Colette Dahanne.

Rydstrom and his team were also challenged in presenting "realistic" aural depictions of the film's World War I setting. There are a few big battles, including one in which a regiment of British cavalry unwittingly charges into a hidden nest of German machine guns, and a long, pivotal scene depicting trench warfare and its attendant horrors—the steady bombardments, the seemingly ineffectual assaults where hundreds of lives are lost trying to take over a few more yards of the contested "no man's land" that separate the British and German troops.

As is common in this sort of film, the recording team captured audio of a wide variety of guns and ordnance from various distances and angles using portable digital recorders, but they also relied on some less portable alternatives. "We dusted off the Nagras and did a lot of the recording of guns and artillery and explosions with those," Rydstrom says. "They're just as hard to lug around as they always were, but they gave us a really big, beefy sound. For a lot of the gun recording, we'd record on Nagras and a series of digital recorders at the same time and I could mix and match. But there was a quality to the Nagra recording the digital couldn't match."

For an important scene involving Joey being terrorized by a then-new Mark IV English tank, Rydstrom notes, "It was impossible to find a working Mark IV tank—the one they used on the set was something else underneath. For the tank, the engine [sound] became less important, and what we concentrated on instead was the squeals it makes and the grinding of the gears and the rattles. It ended up being a mishmash of things. I even recorded my push lawnmower—this old-fashioned, spinning lawn mower—and I slowed that down and combined it with other stuff."

Other war sounds, the majority of them off-camera, allowed Rydstrom and company to get creative. "We manufactured a lot of sounds of explosions and war as heard from a trench, and I used things that weren't real—I used glacier sounds or cracking wood and slowed them down and phased them and treated them a little bit. It was a way to get that claustrophobic feeling of the trench. We also manufactured all these really bizarre artillery pass-bys using vacuum cleaners and bowed metal—anything I could Doppler. There was great variety to it."

Rydstrom and his crew did their sound editing and premixing work at Skywalker Sound; then the action moved down to Fox's AMS Neve DFC–equipped Howard Hawks stage for the final mix, most of which was accomplished in a two-week window that Spielberg had in the midst of finishing another film, *The Adventures of Tintin*. Andy Nelson mixed John Williams' lush and beautiful score and Tom Johnson mixed dialogue. "Steven was there every day, which has not always the case in my experience on other movies with him," Rydstrom says, "and John Williams was, too. So it was as collaborative as you can imagine between those two and us and Richard [Hymns] and the sound crew. It was as intense a two weeks of mixing as I've ever experienced, but it was also very satisfying because everyone was there.

"Very few filmmakers could pull off this movie," Rydstrom concludes. "It's a *movie* movie. It's definitely one of those movies you have to see on the big screen to really appreciate. It feels big in all the right ways." **dv**

WORKING WITH JOHN WILLIAMS' *WAR HORSE* SCORE

On working with a big John Williams score, Rydstrom says, "I have done so many mixes with his music. They're not hard to work with because they're always beautiful. In the case of *War Horse*, it defines the sound of the movie more than anything else. It's a beautiful score, and he scored it in a way that it's not scoring action—it's scoring emotion. In a traditional action movie score, they might be pacing it off the action, but John's doing this overarching thing that holds the movie together, so various themes really build over the course of the movie and are less specific to the action you're seeing."

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Imagining and Managing Audio for *The Muppets*

PHOTO BY PATRICK WYMORE/DISNEY ENTERPRISES

Gary (Jason Segel) and his brother Walter, at left, get spiffy for their big trip to Hollywood.

When an actor's foot is made out of felt, what does he sound like going up a flight of stairs? If your actor is green and has friends named Fozzie Bear and Miss Piggy, he can't sound like the rest of us—but if he's out in the real world, he can't be too far off, either.

For the sound team on Disney's *The Muppets*, the challenge was finding the balance between life in their world and life in ours. "That was the direction we got from our director, James Bobin, and our picture editor, James Thomas," says re-recording mixer Beau Borders, who teamed with veteran mixer Kevin O'Connell at Universal Sound Studios Stage 6. "They wanted everything to feel low-tech but definitely real-world. They didn't want you to ever really think that you were looking at a movie."

> The song "Man or Muppet," with music and lyrics by Bret McKenzie, received an Academy Award for Best Original Song.

Says O'Connell, "Beau and I met with James very early on, and the first thing he said to us was that he didn't want a slick, modern sound job." O'Connell then conferred with 424 Post supervising sound editor Kami Asgar, editor Sean McCormack and the music department to make sure everyone was on the same page.

Foley and sound effects had to match the world the Muppets inhabit, even though their bodies don't quite match those of the humans with whom they interact. Notes Asgar, "When you see a frog made of cloth, you expect

it to sound a certain way. We did a lot of playing around with sounds, trying to figure it out. 'Okay, it can't be slappy like regular skin because it's felt, but at the same time, it's got to make a sound.' It's a matter of making it sound realistic and not letting it be overly cartoonish."

"If a Muppet falls down, in reality it probably only weighs about one and a half pounds, so it's not really going to make a sound," Borders adds. "But if we went over the top, there would be this big, crazy commotion. So we would go for a real body fall; we wanted to keep everything feeling like it was in the real world and that it was a production recording."

Production sound mixer Steve Cantamessa did, in fact, use the spoken voices of the Muppets, nearly all of which were performed live on set by the talented Muppeteers themselves and recorded through headgear-mounted mics. "The only time they ever went in for ADR was for a performance change or a line change," says O'Connell.

OConnell and Borders went to great lengths to transition seamlessly from dialogue portions of scenes to musical numbers to songs written by composer/music supervisor Bret McKenzie. The songs were recorded by McKenzie, engineer Joseph Magee and scoring mixer Casey Stone. Additional vocals for the songs were recorded by Mickey Petralia and Ed Mitchell.

PHOTO BY SCOTT GARFIELD/DISNEY ENTERPRISES

Walter, the newest Muppet (in blue suit), along with his new friends Miss Piggy, Gonzo, Scooter and Fozzie Bear, kindly ask oil baron Tex Richman to not tear down the Muppet Theater.

"The filmmakers really wanted that transition to be almost seamless so it didn't feel like we just turned on the music," O'Connell says. "The challenge there was to make the recorded production dialogue blend with the recorded vocal dialogue," keeping McKenzie's wonderfully Muppety tunes truly alive in the film. "Because the songs are really the stars of this movie." **dv**

OLIVER PETERS

2012 NAB SHOW PREVIEW

What Trends and Technologies Will Take Us Through 2012?

Manufacturers have been holding their NAB info close to the vest during the run-up to the show. This year many have already been showing new versions of products for the past six months. It seems like 2012 will be more of a stable year, when products shown will actually be proven in the field and ready to ship.

ACQUISITION

This is likely to be a great year for RED Digital Cinema. The upstart camera maker is getting its sea legs along with the street cred that comes from being used on numerous high-visibility feature film productions. At the high end, NAB will be a three-way tug of war among RED, ARRI and Sony.

The RED EPIC—arguably the most innovative camera on the market—will be RED's standard-bearer for 4K (and beyond) acquisition. Sony will be in full force to challenge RED's niche with the F65. It was introduced last year in prototype form as Sony's 4K answer, and this year it will return as an actual production model. Meanwhile, ARRI will present several versions of the ALEXA camera. Although primarily an HD camera that's also capable of 3K camera raw recordings, the ARRI ALEXA garnered a sizeable share of the episodic TV market this year, as well as shooting tentpole features like *Hugo*.

The middle tier pits the Sony F3, the new RED SCARLET and the Canon C300 against each other. This will be the first showing at NAB for these RED and Canon offerings, which continue to feed the appetite for Super 35mm-sized sensors at all price points. Although the stereo 3D frenzy will likely be subdued, Sony, Panasonic and JVC each offer twin-lens, one-piece camcorders for

Sony PMW-F3

ARRI ALEXA Studio

RED Digital Cinema SCARLET-X

Sony HXR-NX3D1U

JVC GY-HMZ1

easy stereo production. Sony's HXR-NX3D1U is a lightweight 2D/3D camera that's part of the NXCAM family. Panasonic has built on its development of the AG-3DA1 to offer two additional twin-lens cameras, the AG-3DP1 and HDC-Z10000. JVC has joined the twin-lens party with the small GY-HMZ1U. It uses the same chip technology at the GY-HMQ10 camcorder, which is capable of capturing and recording 3840 x 2160 images at 24p, 50p and 60p. The JVC HMQ10 promises to be the lowest-cost camera to record 4K frame sizes.

Video-enabled DSLRs continue to be popular, with particular interest in the Canon EOS-1D X, which promises improved HD video capture, and the EOS 5D Mk III. The only production-friendly camera of this style and in this price range remains Panasonic's AG-AF100, which is based on the Micro Four Thirds format. Of course, these cameras don't fit the needs of many run-and-gun videographers, which means Sony, Panasonic and JVC will continue to promote their popular XDCAM, P2 VariCam and ProHD products here.

Naturally, the acquisition segment includes a growing selection of solid-state recorders from AJA Video, Convergent Design, Cinedeck, Sound Devices, Atomos, Blackmagic Design and others. An interesting trend in all of these offerings is the move to add additional codec options. Many started as Apple ProRes-based QuickTime media recorders, but Apple's introduction of Final Cut Pro X has spooked the industry enough to hedge its bets. Many of these vendors are offering the ability to record using an Avid DNxHD codec in addition to ProRes. A new, albeit expensive addition to this group is the Sony SR-R4 portable memory recorder, designed as a companion to the F65.

POST

Apple hasn't been an official exhibitor for years, but the company nevertheless continues to impact the NAB Show. Final Cut Pro X has splintered the industry in a way that has sparked new interest in Avid, Adobe and Grass

Canon EOS C300

JVC GY-HMQ10

Canon EOS 5D Mk III

Panasonic AG-3DP1

Panasonic HDC-Z10000

Valley desktop edit systems. In November, Avid released its highly anticipated 64-bit update for the Media Composer/NewsCutter/Symphony product family (version 6.0). It also released Pro Tools 10. This will be the first NAB showing for each. Left out of these announcements has been any word of the company's flagship Avid DS editor, so maybe that leaves some room for an NAB surprise. Avid also recently released its Avid Studio for iPad software. It's targeted at consumers, based on the Avid Studio NLE.

The betting money is on Adobe for big show news. The video products in the Creative Suite saw only a small upgrade last year, to CS5.5. Since then, Adobe has made tremendous gains from the Apple FCP X fallout, not to mention picking up IRIDAS (makers of the SpeedGrade color correction software) and Automatic Duck's development team. They've become popular with RED camera users and have played instrumental roles in the post pipelines of films including *The Girl with the Dragon Tattoo*, *Hugo* and *Act of Valor*. Recently Adobe previewed Prelude, a media browsing and pre-editing application. They've also posted little online "peeks" at some of the new content-aware features of Photoshop. Clearly the anticipation is mounting.

As some users reconsider the Mac platform entirely, Windows-only solutions like Grass Valley EDIUS are gaining interest. At NAB, EDIUS 6.5 will demonstrate a comprehensive stereo 3D editing workflow and native support for raw footage from RED cameras. A special systemized EDIUS version will be able to work with the Grass Valley K2 Summit 3G server. The full family of 3D-compatible Grass Valley editing peripherals, such as the STORM 3G 3D and STORM 3G Elite 3D accelerator cards, are now supported from the EDIUS timeline. EDIUS 6.5 also incorporates a new Flash exporter, native image stabilization, built-in loudness meter and closed caption/audio bit stream (Dolby-E, AC-3) pass-through support.

EditShare has continued advanced development of Lightworks, adding greater codec and third-party support, project sharing and stereoscopic workflows. On its NAB stand, EditShare will host a "Lightworks Edit Bar," where attendees can test-drive the latest Lightworks release. EditShare is also a leading supplier of shared storage solutions and systems for collaborative workflows. New capabilities to be shown at NAB include Adobe Premiere Pro project sharing, support for Final Cut Pro X and enhanced networking configurations.

Autodesk Media & Entertainment will mark the 20th anniversary of Flame at NAB with top-notch client demos. Evan Schechtman, chief technology officer of @radical.media, will present Smoke for Mac, while Vico Sharabani, VFX supervisor/co-founder of COPA, will present Flame Premium.

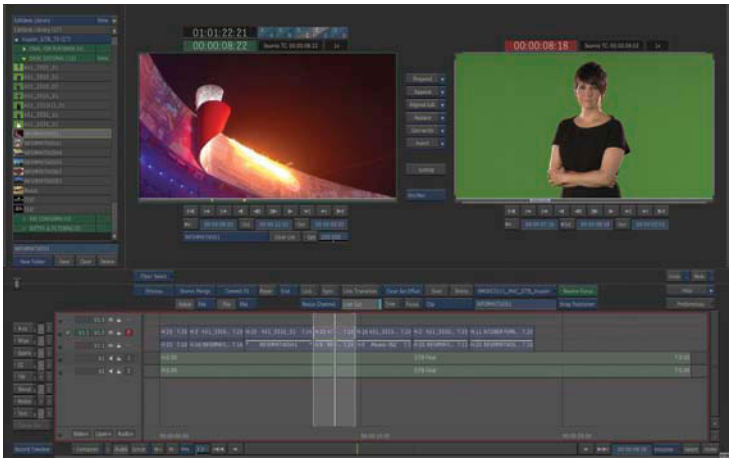
THUNDERBOLT

Last year Thunderbolt was a fledgling technology, but this year I predict it will be in abundance. Thunderbolt-equipped Macs have been selling for months and the first PCs with Thunderbolt are hitting the market now. For editors, this means Thunderbolt capture/

Avid Symphony with Artist Color

Avid Studio for iPad

Grass Valley STORM 3G



Autodesk Smoke for Mac

MOTU HDX-SDI

offer three Thunderbolt products: Intensity Shuttle Thunderbolt, Intensity Extreme and UltraStudio 3D. These target a variety of needs and budgets and are designed for anything from simple HDMI monitoring to full 2K and 3D capabilities.

MOTU, another popular interface vendor, has added Thunderbolt technology to its HDX-SDI video output/broadcast monitoring cards and storage. There are varied solutions from all the vendors, with differing feature sets to suit your need. AJA Io XT builds on AJA's track record with the robust Io product family. Io XT supports analog and digital I/O, VTR control, Thunderbolt loop-through and 4:2:2 or 4:4:4 SDI plus HDMI connections. Blackmagic Design will device. HDX-SDI is a 1 RU high, rugged HD/SD external device with extensive audio features in addition to the video capability. Matrox, on the other hand, has decided to offer a PCIe-to-Thunderbolt adapter instead of a dedicated Thunderbolt-specific product. The adapter, showcased at last year's NAB Show, can be used with any of the MXO2 products, which means that these can continue to be used with

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non-Thunderbolt workstations and laptops. For the first time in the history of the industry, all of these I/O products are supported by all of the most popular NLE software. Some of the drivers are still in beta, but all of the devices will work with FCP X, FCP 7, Premiere Pro and Media Composer.

Storage is the other part of this story, since the design of Thunderbolt technology permits the I/O device, the computer display and an external drive array to all be connected to one port as part of a single daisy chain. Promise Technology introduced its Pegasus RAID last year; to date, this has been the main Thunderbolt-compatible system. LaCie has also been shipping Thunderbolt units, and Sonnet Technology offers both drive arrays and an ExpressCard/34-to-Thunderbolt adapter. Expect to see a lot more options at NAB, including products from G-Technology, Western Digital and possibly CalDigit.

OF FURTHER INTEREST

Questions over the future of the Mac Pro tower have some users moving to PCs, especially those made by HP. Ironically, HP recently announced its own all-in-one computer (the 27" HP Z1 Workstation) along the lines of the iMac. In past years, Apple has had an invisible presence at the show based simply on the number of machines (usually Mac Pro towers) used by demo artists in many vendor booths. It will be interesting to see how many of those same demos are running under Windows this year.

Blackmagic Design has been on the corporate acquisition trail for several years, assimilating DaVinci and Echolab products into its family. The newest member is Teranex, maker of the "gold standard" in format converters. Predictably, the initial result has been a simplified product line and a lower price for the Teranex flagship VC100 processor. Expect to find them in the ever-growing Blackmagic Design booth.

Cloud editing has kept a low profile since a number of prominent demos by Avid and others a few years ago. Avid and Quantel are offering the only cloud-based editing solutions to date. In the case of Avid, cloud editing falls under the Integrated Media Enterprise banner and specific products are part of Interplay Production. For Quantel, it's QTube, a complete set of scalable mobile browsing and editing applications that work over IP. On a smaller scale, Adobe has been promoting its cloud-based Story application as part of an end-to-end use of metadata. Expect to see more from these three and others at the show. **dv**

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Shortly thereafter, NewTek began offering HD-capable appliances. The recently released 850 Extreme reaches the apex of dedicated streaming devices.

TriCaster 850 Extreme looks unassuming. It weighs 42 lb. and measures roughly 19" x 7" x 21". Like the entire product line, TriCaster 850 is essentially a computer running on a Windows platform, but the user is entirely isolated from the Windows OS, so it should be considered a dedicated device. Attach a monitor, or multiple monitors, keyboard and mouse and boot it up. The 850 Extreme features eight camera inputs with every possible interface: SDI, HDMI, component, S-Video. You can mix and match cameras, formats, SD and HD. It is compatible with

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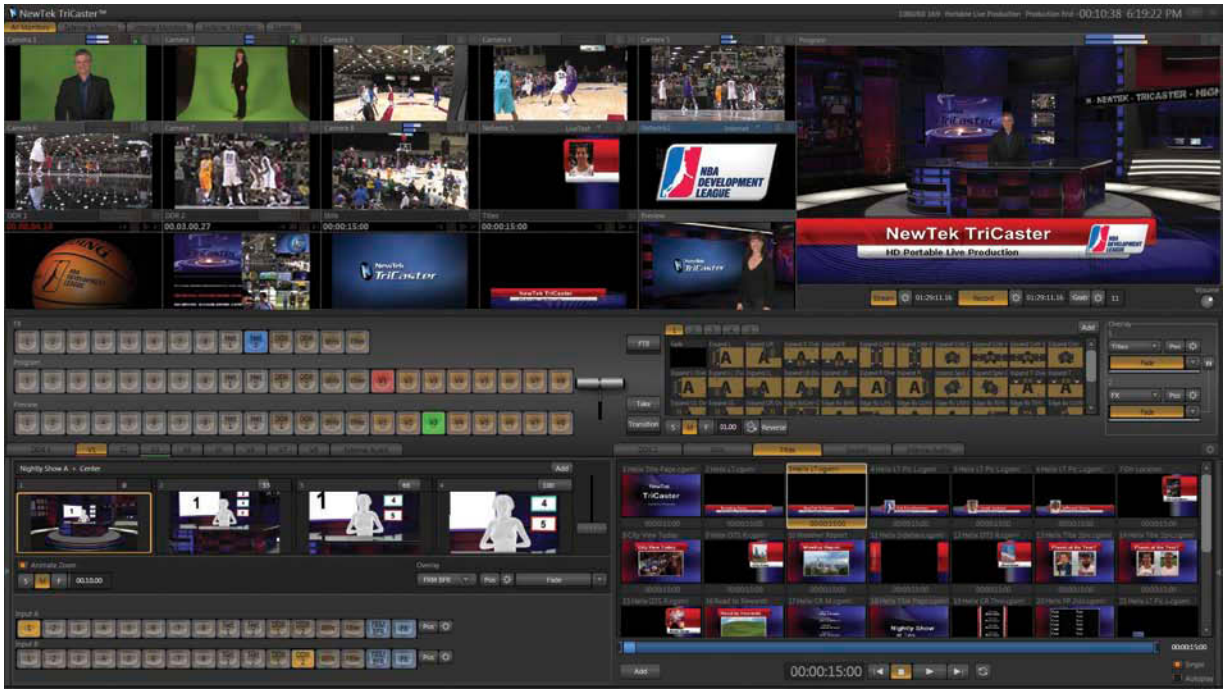

TriCaster 850 Extreme user interface

Apple AirPlay, so it will accept video wirelessly from iOS devices. As if that weren't enough, it will also accept input via DVI and its built-in scan converter.

It accepts any analog audio format or AES audio and provides phantom power to connected microphones. Each audio input also boasts full EQ and compression controls.

The 850 Extreme includes four swappable SATA drives to achieve up to 200 hours of recording at 1080i or a whopping 1,200 hours at 480i. Like all TriCasters, it has virtual inputs, DDRs, virtual sets (24 included, optional Virtual Set Editor available), titling, and limited editing via the optional SpeedEDIT application.

Using the TriCaster is a snap. Boot it up, connect sources and switch using mouse and on-screen switcher. My test unit included the $6,000 TriCaster 850 CS control surface, and I strongly recommend all users purchase that option. I feel more comfortable switching with a physical console than trying to coordinate the mouse.

What has always amazed me about the entire TriCaster line, from the basic units all the way up to the 850 Extreme, is the ease of operation. Anyone familiar with a switcher can get to work right away. Punch up the shots. Add transitions. Cue up pre-recorded DDR material. Add some titles. NewTek reps love to regale buyers (and journalists) with stories of school kids who learn to use a switcher in a matter of a couple of hours.

TriCasters offer three output options (if you were wondering why the "tri"): record to disk, output at whatever resolution you choose to whatever device you choose, or stream live. In that regard, TriCaster 850 Extreme will record SD or HD transcoded in real time to a MOV or AVI file in a variety of codecs, including H.264. It streams video up to 720p with real-time encoding from whatever mixed sources you feed it. Streaming is in Flash via a Flash server or through browser plug-ins, or via Microsoft Windows Media Push-Pull. All

NewTek's TriCaster on FOX's *The X Factor*

streaming profiles are supported, as are multi-bit-rate profiles.

There are two features in the 850 Extreme I found particularly impressive and that in my demo testing I found to work flawlessly. The first of these relates to acquisition and the 850's ability to record up to eight ISO camera shots while switching and streaming. Without missing a beat. The second outstanding feature is the revamped streaming interface. Earlier versions of TriCaster had merely a stream configuration screen; 850 Extreme actually launches the Web Browser with a profile manager GUI.

Another worthwhile option for potential buyers is the TriCaster 850 TW slow-motion controller ($2,500), which enables real-time slow motion and instant replay, tapping built-in features of the 850 Extreme. The application for sports webcasting is an obvious one.

SpeedEDIT is a basic editing option that does the job. But TriCaster really should not be looked on as an editing device. Pre-edited material from any NLE can be imported into the 850 and then cued up for program feed. SpeedEDIT is nonetheless a real-time editor with the ability to mix SD and HD on a single timeline and scale and move objects in real time.

More important, particularly for sporting and live events, is the LiveText titler, which allows the display of real-time data.

Who needs the 850 Extreme? Certainly broadcasters who run a parallel web feed to broadcast feed. Live event venues, which require the highest possible resolution and production sophistication, are other candidates for the 850 Extreme.

TriCaster's main competition is from the Sony Anycast system, but at a fraction of the cost of the Sony, TriCaster 850 Extreme delivers significantly more features. It is the top of the heap of webcasting systems. **dv**

TriCaster 850 Extreme

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Available in both photo and video/film versions, Film Stocks offers artists simulations of 288 different color and black-and-white photographic film stocks, motion picture film stocks and historical photographic processes. The plug-in features a range of preset looks as well as the necessary controls to create analog film stock presets from scratch, including color correction, curves, colored filters, sharpness, diffusion, vignetting and film grain. The $195 video plug-in supports Adobe After Effects CS5+ and Premiere Pro CS5+; Apple Final Cut Pro 6/7; and Avid Symphony, Media Composer, NewsCutter and Xpress Pro. **www.digitalfilmtools.com**

IKAN CORP.

ELEMENTS

Ikan's Elements product line provides a variety of stabilization and accessory mounting solutions for DSLR cameras. Offerings are available both as preconfigured kits and as single components. Preconfigured kits range from a simple base plate with grips to a full-featured rig with accommodations for monitors, lights, follow focus and more. Designed around established industry specifications, the Elements line allows users to mix and match components, including those from other manufacturers. **www.ikancorp.com**

ZACUTO

SCORPION RIG

Zacuto's Scorpion DSLR camera support rig has a spherical lock so the shoulder pad can articulate and features a new ball-joint technology that lets the user fine-tune the camera rig's positioning. The rig's coated Lycra exterior allows pressure to be absorbed by the synthetic polymer inside, while the shoulder rails are machined as one piece for strength and lightness. The Scorpion's collapsible handle is another modernized feature. **www.zacuto.com**

CINEDECK

CINEDECK RX

A rack-mountable solid-state recording, monitoring and playback system, Cinedeck RX can be used for single input, dual input two camera, or 3D stereo shoots. (Its "Double Dual-Stream" feature delivers the flexibility to capture two feeds at a time with the same codec, or to capture one feed with two different compression formats while simultaneously creating backup copies of each.)

Cinedeck RX offers simultaneous native support for Avid and Apple standards—supporting Avid DNxHD (wrapped as MXF OP-Atom or QuickTime), JFIF for proxies, and all Apple ProRes codec formats, including 4444, CineForm and uncompressed 444 (10-bit) or 422 (8- or 10-bit). Video is monitored in real time via a high-resolution 7" touchscreen display. Cinedeck RX allows users to review shots instantly and in any order via the built-in display, or with external HD-SDI or HDMI monitors. **www.cinedeck.com**

CANON U.S.A.

EOS 5D MARK III

The EOS 5D Mark III DSLR camera features a 22.3-megapixel full-frame Canon CMOS sensor, DIGIC 5+ imaging processor, 61-point High Density Reticular Autofocus System and 6 fps continuous shooting speed. In video mode, the Mark III captures 1080p Full HD video at 24p (23.976), 25p and 30p (29.97) fps; 720p HD recording at 60 (59.94) and 50 fps; and SD recording at 30 (29.97) and 25 fps. Other improvements for video use include better noise reduction, longer recording times and a built-in headphone jack for audio monitoring.

The 5D Mk III is expected to be available at the end of March in a body-only configuration for $3,499. MSRP of kit with an EF24-105mm *f*/4L IS USM zoom lens is $4,299. Options will include WFT-E7A wireless file transmitter (available end of April for $849.99 MSRP), GP-E2 GPS receiver (end of April, $390), BG-E11 battery grip (end of April, $490), Speedlite 600EX-RT and Speedlite Transmitter ST-E3-RT (end of March, $629.99 and $470, respectively). **www.usa.canon.com**

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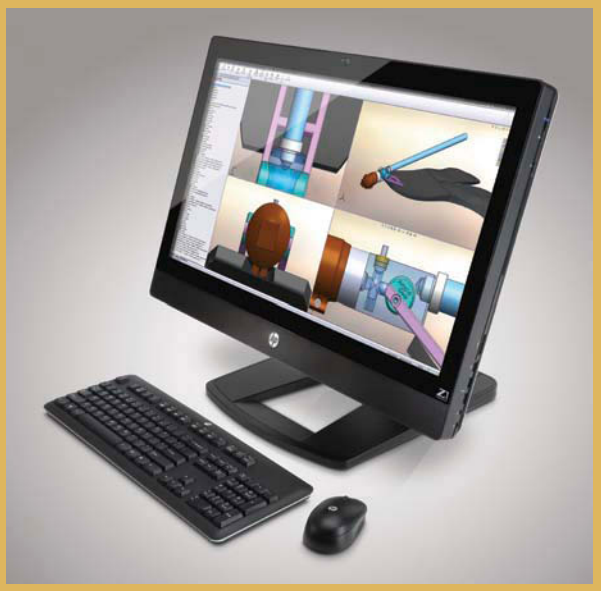
LIBEC

SWIFT JIB50

The SWIFT JIB50 is portable, lightweight (36.1 lb.) and flexible, designed to accommodate a range of spaces. On Libec's T102B tripod and DL-8B dolly, the unit has an average setup time of five minutes. The SWIFT JIB50 is equipped with a telescopic arm (39.5" to 75") that can be positioned by turning and adjusting the arm's lock levers. In addition, the jib can be retracted at both ends. Using the supplied hexagon wrench, the arm can be retracted 11.8" toward the rear of the jib. The SWIFT JIB50 ships with jib, padded carrying case, 75mm adapter and adjusting weight. **www.libecsales.com**



HP

Z1 WORKSTATION

An all-in-one workstation with a 27" diagonal display, HP's Z1 features NVIDIA Quadro graphics, ECC memory and quad-core Intel Xeon processors. The display of the Z1 snaps open so users can easily swap out parts and make upgrades without tools. The LED display supports more than 1 billion colors and features a wide, 178-degree viewing angle and an in-plane switching (IPS) panel. The HP Z1 Workstation is expected to be available in April starting at $1,899. **www.hp.com**

MILLER CAMERA SUPPORT

SKYLINE 70

This sturdy 150mm ball-base fluid head supports a range of camera configurations up to 88 lb., complementing lighter-weight sports and outside broadcast production setups. With rear-facing illuminated controls, the Skyline 70 offers seven-position pan and tilt drag, eight positions of selectable counterbalance, and +90 degrees tilt. Other features include a 120mm sliding quick-release camera platform, mounting block/adapters for accessories and safety tilt lock. **www.millertripods.com**

REDROCK MICRO

ULTRACAGE | BLUE FOR CANON EOS C300

Within the ultraCage | blue product line, Redrock is offering five rig configurations for the Canon EOS C300, including the Ultra Event compact handheld rig, Ultra Field Cinema Bundle shoulder-mount rig for use with external monitor or EVF, and Ultra eyeSpy shoulder-mount rig for use with C300 viewfinder. For studio productions, Redrock offers the ultraCage | blue 15mm Cinema Bundle and ultraCage | blue 15/19mm Cinema Bundle. Pricing for the ultraCage starts at $550. **www.redrockmicro.com**

A NEW GENERATION OF GEAR FOR A NEW GENERATION OF CAMERAS

The New ultraCage | blue from Redrock Micro

The latest digital cinema cameras from Canon and others offer amazing images, huge chips, piercing shadow and highlight detail, and interchangeable lenses, but in a small unwieldy box. The all-new ultraCage | blue from Redrock Micro is the missing link to transform these cameras into fully functional production powerhouses. ultraCage delivers rugged support, a vast array of mounting options, infinite flexibility, and advanced features including power management. Redrock ultraCage | blue is the only rig selected by Canon for the product launch films of their groundbreaking EOS C300 digital cinema camera. Like all Redrock accessories, the ultraCage | blue is professional level while staying profoundly affordable.

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create the cinema experience

JAY ANKENEY

CAMERA CLASS

Intel and Insight on Sony's CineAlta F65

Sony's CineAlta F65 has become the most anticipated digital cinema camera introduction since the RED ONE from RED Digital Cinema back in 2007. Not only did the F65 receive *TV Technology* magazine's Mario Award at the 2011 NAB Show and a Best Camera Technology prize at Cine Gear Expo 2011, but by the time it was released in January 2012, it had received more than 400 pre-orders worldwide—before anyone actually got their hands on a working model.

"The CineAlta F65 has several breakthrough features that make it unique," says Joel Ordesky, project marketing manager, digital motion picture production, at Sony Electronics. "It's the only camera with an 8K CMOS [Complementary Metal Oxide Semiconductor] imager filled with 20.4 megapixels, providing a true 4096 x 2160 resolution on output. In addition, pending the release of ARRI's ALEXA Studio M, it's the only digital cinema camera with a spinning mechanical shutter to eliminate the rolling shutter 'Jell-O effect' that plagues most CMOS sensors."

But most importantly, thanks in part to Sony's design of the proprietary CFA (Color Filter Array) and the fact that the F65 is the first camera to offer a dedicated green photosite for each pixel in the 4K image it outputs, the CineAlta F65 has a color gamut that is actually wider than that of film. It is a point of historic irony that Sony released the CineAlta F65 during the same month that the Eastman Kodak Company filed for bankruptcy. Remember film? The celluloid king is dead, long live the digital king!

Sony is pricing the F65 at $65,000 for the camera with viewfinder but with an electronic shutter. The company ran a promotional special

through December bundling the camera with a mechanical shutter, SR-R4 portable memory recorder module and control panel for $85,000, which should give you an idea of where it will hit the street.

The camera uses standard PL-mount lenses, ARRI's "positive lock" style, which should increase its familiarity to traditional film shooters.

How can filmmakers get the most out of the Sony CineAlta F65? As the training department manager at the AbelCine sales and rental facility in New York City, Andy Shipsides is a camera technology specialist and one of the first to test out Sony's new offering.

Shipsides says the camera is fairly straightforward and easy to use, but there are a few tips and tricks that will help digital videographers maximize its potential.

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The innovative new (77mm) True-Match Vari-ND thread-In filter puts you in control of your exposure by allowing you to intuitively dial in just the right amount of neutral density up to 11 stops.

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Also available is the 4X4 True-Match Vari-ND Filter Kit system.

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Schneider OPTICS

Shipsides begins by explaining that with all its signal processing power, the F65 requires a lot of power. "The camera draws 105 watts per hour when running with both the mechanical shutter and viewfinder on. That's more than most other digital cinema cameras except perhaps the Vision Research Phantom, so it could go through even an Anton/Bauer HyTRON 140 battery block in an hour."

Shipsides also cautions that the earliest F65 models could output only in a 16-bit F65 RAW format (19 Gb/s) at 4K resolution; however, software to convert this to the SR codec at 5.5 Gb/s should be available by the time this article appears. Once converted, the recordings will be viewable on set on an HD monitor and may be imported into a file-based postproduction workflow.

The camera comes with a 256 GB SRMemory card from Sony, which is good for recording only about 15 minutes. To shoot an hour's worth of material you'll need a 1 TB card, so investing in a SR-PC4 SRMemory data transfer unit/download station will help free up memory cards and facilitate ingesting the recordings into other systems through faster-than-real-time transfers. The current SR RAW files take considerably longer.

As it is shipping now, the camera can record only up to 60 fps, but speeds up to 120 fps should be enabled by June once a faster shutter is developed.

The F65 has the potential to redefine what we will be expecting from future digital cinema cameras.

You can set up the camera either via switches on its side or over Wi-Fi on an Apple iPad. Just dial in the shutter speed, ISO and frame rate, set the white balance and LUT output, and it's ready to go. Shipsides expects that apps will be available soon to let you control the camera through any web interface.

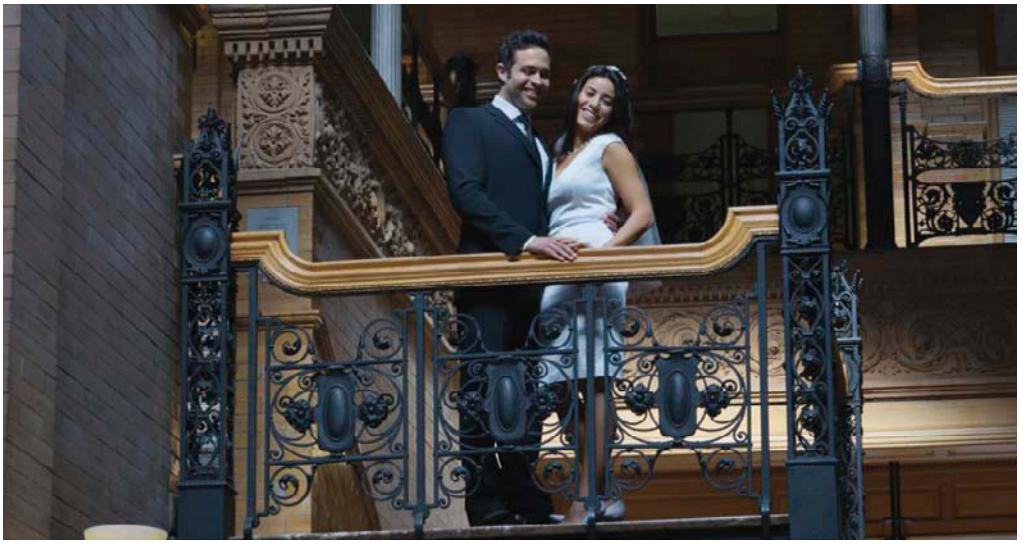
He suggests you monitor the camera in Sony's flat S-Log mode to best evaluate its 14-stop exposure latitude. By looking at this "digital negative" logarithmic curve, you can select either "S-Log high" or "S-Log low" mode to see details in either the brighter or darker areas of the image. Then, to see how the video will look in the real world, you can switch the camera's display to Rec. 709 video mode and evaluate it against reference black and white levels.

If you are working with a CineAlta F65 equipped with a spinning shutter, you are going to have to be prepared for a slight delay while the rotating shutter gets up to speed or if you decide to switch from the electronic shutter mode to the mechanical shutter.

The electronic shutter mode can be a boon in low-light situations because its effective opening can be greater than the 180-degree limitation of the rotating shutter.

The first versions of the CineAlta F65 are designed to record to an SR-R4 portable memory recorder, which can also play back video in HD format. As of now, the SR-R4 is designed to be mounted on the camera, but a removable fiber-attached version is expected soon.

With the resolution potential of pictures being recorded at 8K and downsampled to 4K as they are in the CineAlta F65, it will be



Still photo (JPEG from an F65 frame) from *The Arrival*, directed and shot by Curtis Clark, ASC

Left: The F65 holds detail in the sunlit exterior as well as the interior blacks in this still from *The Arrival*, directed and shot by Curtis Clark, ASC. (JPEG from an F65 frame)
Right: Sony's F65 is being used to shoot M. Night Shyamalan's *After Earth.*

worthwhile to budget in ARRI or Zeiss Master Prime quality lenses if you want to get the most out of the camera's imaging capability.

Shipsides appreciates the fact that the F65's PL-mount lens mounts are flangeable, which means that micron-thick metal shims can be inserted behind the lens to adjust the back-focus distance between the lens and the sensor. But he suggests this adjustment should be left to camera specialists.

Sony's CineAlta F65 is more than just a successor to the CineAlta F35 that has been the main camera on many big-budget productions, most recently Anthony Hemingway's *Red Tails*. The F65 has the potential of raising the bar for digital cinema and redefining what we will be expecting from future digital cinema cameras. **dv**

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MYT 3 in 1	MYT Works	From $995		My top pick in the $1,000-$3,000 range. This slider dolly system is solidly hand-constructed and virtually silent. Available in small, medium and large carrying weights up to 200 lb. Buy it as a 3-in-1 with the rubber-wheel skater (includes MYT Glide, MYT Hi-Hat and MYT Skate), buy the slider, or buy the skater. Just too much to say about the product line, so check out MYT's web site. And just buy it.
www.mytworks.com				
Dana Dolly	AZGrip	From $480		Available in standard and junior model. Supply your own rail and supports. Operates on virtually silent wheels. Numerous accessories. Solid construction and an excellent value.
www.danadolly.com				
Cineped Roto-Slider	Camera Support Industries	$4,950		One of the more distinctive products I have seen. The Cineped holds rigs up to 120 lb. It is a versatile slider with the ability to rotate on its center axis, which allows for any number of camera movements. Cineped also makes a rotational pedestal for studio work.
www.cineped.com				
Atlas 10	Cinevate	$630		Cinevate manufactures a line of sliders, dollies and other camera support accessories. The Atlas 10 is an ideal DSLR slider with its full ball bearing system for quiet and accurate use. Numerous options. Use on tabletop, apple crates, light stands or virtually any support.
www.cinevate.com				
Philip Bloom Pocket Dolly	Kessler Crane	$1,095		Kessler's product line includes supports, jibs, heads and sliders, the largest of which is the CineSlider. The Philip Bloom Pocket Dolly, designed in partnership with cinematographer Philip Bloom, uniquely offers a crank in addition to the ability to slide manually. Motorized system also available.
www.kesslercrane.com				
OmniSlider	DitoGear	From $2,500		Motorized slider with controller. Use horizontally or vertically. Remote control allows for slow motion or time lapse in addition to full control. Precise, repeatable movements. A breakthrough in this price range.
www.ditogear.com				
DC Slider	Matthews Studio Equipment	$7,500		Matthews—the name says it all. It's a slider, mini-jib and tower. The DC Slider has numerous options and configuration possibilities. Quality of construction and versatility distinguish this product.
www.msegrip.com				
Slidecam Lite	Varavon	$599		The entry level of Varavon's slider line, which ranges up to a full ENG camera slider. An excellent value for a tabletop slider with included feet. This model is suitable for DSLR work all the way up to cameras weighing 19 lb. Versatile options allow use as mini-jib or even in vertical position.
www.varavon.com				
Slim-Line Pro	Omni-Tracker	$995		I've been using the Slim-Line Pro for more than a year with great success with DSLR and Sony EX cameras. This is a three-wheel tabletop dolly with adjustable legs and an optional ($145) laser-pointing system to align movement to create perfect arcs relative to the subject. Very sturdy and something I recommend from my own use.
www.omni-tracker.com				
HD Hybrid Slider	Glidetrack	$466		The Glidetrack line is broken into SD, HD and XD ranges. HD Hybrid Slider, developed in conjunction with Igus, incorporates both roller bearings and slider bearings. Self-lubricating carriage requires less operator exertion than similar products. Includes adjustable feet. Use on tabletop or mount on tripods or light stands.
www.glidetrack.com				

You'll find links to these products at www.dv.com/Apr2012

TIPS TO CLIP

DICK REIZNER

HUMMING ALONG

Most of us have occasion to record a presenter who is using a public address system. When we have to attach our microphone to the PA mic or stand, there is always the possibility of creating a hum. To avoid allowing our mic to make electrical contract with the house system, we wrap it in nonconductive tape. However, be careful not to cover any of the sound ports on either microphone.

Also, because most people tend to get too close to the PA and overload the system, we try to mount our mic slightly behind house's so it is guarded from people who are trying to "eat" it.

THE KEY SOLUTION

"We were constantly misplacing suitcase and equipment case keys between trips," shares Alex Rockforth of Detroit, Mich. "If we did manage to keep track of them, there was the hassle of trying to figure out which key went with which case."

Alex solved the problem by attaching the keys to their respective case handles with rubber bands when the cases were stored following a trip. A small dab of paint on the key and lock tells him which key to use if they get mixed up. Of course, this problem could be avoided by having all the cases keyed alike.

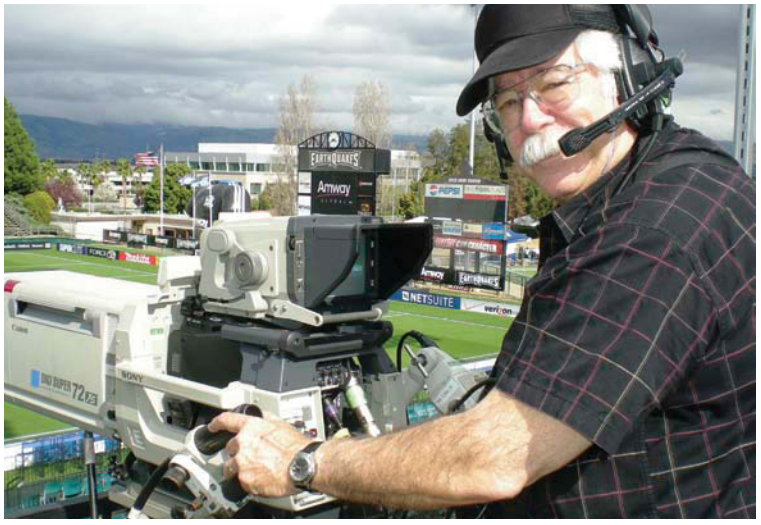
SHARE YOUR TIP

Now it's your turn to share a favorite shooting or production tip or question with your fellow professionals. Please send e-mails to tips@dv.com.

All submissions become the property of Reizner & Reizner. None can be returned.

WHAT LIGHT THROUGH YONDER...

"I always put a piece of black electrical tape over the front red 'rolling' tally light on my camera," writes videographer Mitchell Silvers of Portland, Ore. "Civilians seem to react less self-consciously when they can't see the light. I can also roll sneaky if they happen to be very nervous and camera shy. Sometimes I get my best takes while I'm seemingly just hacking around, putting them at ease. I always tell them afterward if I intend to use a sneaky take, and I have never had anybody hesitate to say yes."



PAN UP, TILT LEFT

There are few things more confusing to the members of a multi-camera video crew than a director who doesn't quite know the language of the business. You don't have to be an expert, just sound like one. So pan left, but get it right. Here is a brief glossary of camera movements that may help the newbie:

Pan: The camera stays still and is twisted left or right.

Tilt: The camera stays still and is tipped up or down.

Dolly or truck: The camera is on some type of dolly or slider and is physically moved from one place to another during a shot.

Track: Basically the same as dolly or truck but usually implies keeping a moving subject in frame.

Boom Up/Down: The camera is on a jib or crane and is raised or lowered.

Ped Up/Down: The camera is on a studio-type pedestal and is raised or lowered.

LIGHT ON ITS FEET

Many of us carry some type of multi-tool and a small flashlight whenever we are working. Here's a tip that will make both of them much more useful. Wrap a rubber band around the handles of the multi-tool when it's in the "pliers" configuration and it becomes a stand for the flashlight. The same trick turns the tool into a third hand that will hold small parts when I am trying to solder them. This rubber band tip also works with regular pliers, of course, but those aren't normally on my belt.

DV101

JAY HOLBEN

LOG IN AND LEARN

Continuing Your Education Online

I have always been a strong proponent of teaching and sharing, especially with aspiring filmmakers. The "column" that I used to write in the MySpace Filmmaker's Forum (yes, MySpace—I'm old) eventually evolved into this column; my book, *A Shot in the Dark: A Creative DIY Guide to Digital Video Lighting on (Almost) No Budget*, was the culmination of years of low-budget cinematography and a popular lecture I gave for years at Digital Video Expo called "Lighting from Home Depot."

Teaching and sharing information has been a side job for me my entire professional career. Since it is very important to me that I am always learning and sharing, I am constantly on the lookout for great sources of information—especially those available online.

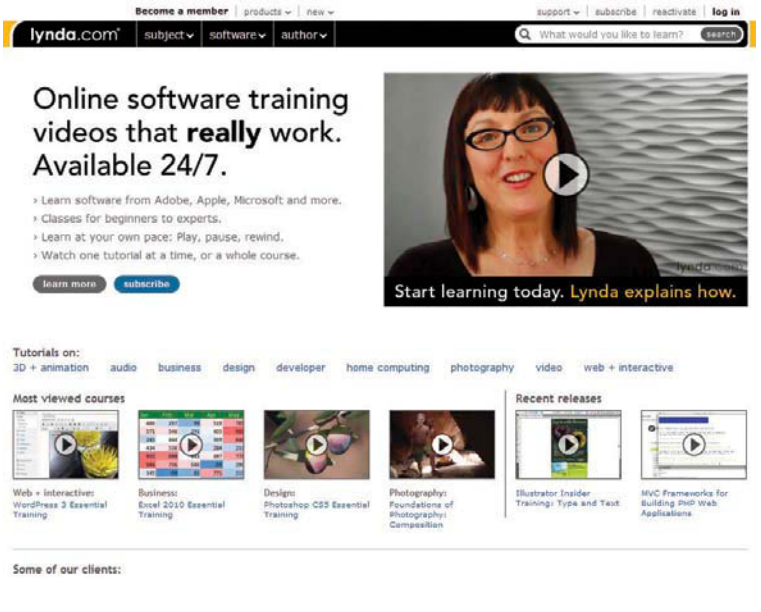
Of course, one of your first stops for information should be *Digital Video* magazine, DV.com and our forums at www.creativeplanetnetwork.com/forums—that should go without saying—but in this article I'm going to talk about other great resources you might not have run across.

NOFILMSCHOOL.COM

This site, started in 2005, is run by independent filmmaker Ryan Koo and serves as a DIY resource for filmmakers and independent creatives. As Koo explains on the "about" page, "The site focuses on tools and technology relevant to filmmakers, writers, directors, editors, producers, cinematographers, bloggers, designers and entrepreneurs. If you're a multi-hyphenate—meaning, you're more than one of these things—all the better."

The site is a collection of articles—some written by Koo, some by contributors, many re-posted from other sites around the web. Koo's writing is smooth and accessible. Koo is an autodidact, and the site evolved along with his self-education.

When you sign up with NoFilmSchool.com, you get a PDF of Koo's 100-page book *The DSLR Cinematography Guide*, an extraordinarily well written and incredibly detailed volume that covers considerable ground, from the basics of cinematography to understanding lenses, cameras, accessories and even postproduction. The guide alone is worth the price of admission (which amounts to sharing your e-mail address with Koo); the site's content and weekly digest e-mails of articles "you might have missed" are the icing on the cake.



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DV Expo East returns to New York for the second year in a row at a new, bigger location with more exhibitors, education, networking, and conference content. DV Expo East is quickly becoming the premier destination for content creation pros to explore the latest technologies, learn from world-class professionals and connect with peers who share your passion for video.

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For Information about exhibiting contact: Jacqueline Gospodinoff | 212.378.0493 | jgospodinoff@nbmedia.com
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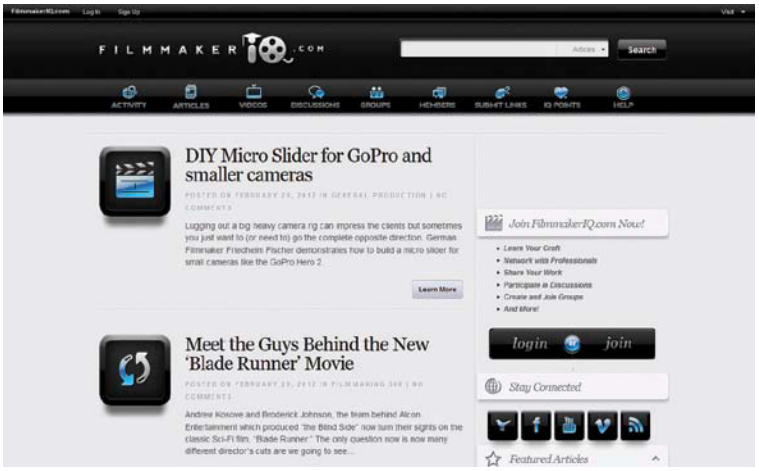

effects. It's an online learning resource of world-class quality. This is not a free resource—you'll need to pay a subscription fee of between $25 a month and $375 a year, depending on your needs. The videos are well produced and extremely informative. They'll have you up and running in no time.

Many years ago when I first got to test Adobe After Effects 5.0 for *American Cinematographer* magazine, a training video was included (VHS!) in the box. Watching the 30-minute video got me up and running immediately in After Effects—and I've been working with those skills for nearly a decade since.

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Lynda.com is a wonderful resource for learning specific skills and expanding your professional repertoire.

FILMMAKERIQ.COM

Created and run by micro-budget filmmaker John Hess, FilmmakerIQ.com is primarily a collection of news, reviews and tutorials from around the web, along with a forum. The site is well designed and easy to navigate. In addition to curating links to outside news and articles, Hess tosses in his own opinions in his articles, videos and podcasts.

His articles are aimed at micro-budget DIYers, and he shares lots of great tips and techniques. I often go through the pages of FilmmakerIQ to find inspiration for DV101 subjects and to see what innovative projects and products are being built in garages around the world that may be newsworthy for *Digital Video* readers.

SUPERMENTORS.COM

This isn't really a web site, forum or collection of training videos—it's a program run by industry veterans Marc and Elaine Zicree, the authors of more than 100 produced television series scripts, screenplays, pilots and even a series of novels. Marc might be best known as the author of the incomparable *Twilight Zone Companion*. For the last 16 years Marc has run a networking group called the Industry Round Table that meets near North Hollywood every week. He runs the networking group with an incredibly warm, giving and supportive spirit. The group, of about 1,000 members, is composed not only of new filmmakers but also Emmy- and Academy Award-winning veterans. Writers, directors, producers, actors, cinematographers, composers, editors, production designers and more are welcome to the table.

But where Marc really shines is in his Supermentors class. He and Elaine meet with mentoring students every week for six weeks to "maximize opportunities" in their careers. Supporters of this program include Guillermo del Toro (*Pan's Labyrinth*), J.J. Abrams (*Star Trek*, *Super 8*) and

(continued on page 80)

Bigger, better, smarter solutions for all the tools, technology and skills you need.

think

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smarter

Save the date! Digital Video Expo is where industry pros like you gather for training, networking, and to preview the latest products that shape the way you create, store and distribute video content. See the newest innovations in digital video technology and get inspired to think big!

NEW FOR 2012! Conference partner Future Media Concepts presents the LA Post | Production Conference, where you'll learn the latest tips and techniques on Apple, Adobe and Avid software and video production to helpy you work smarter by increasing both your creativity and productivity.

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Think bigger, work smarter at DV Expo.

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For information on exhibiting at Digital Video Expo, contact Jackie Gospodinoff at 212-378-0493; jgospodinoff@nbmedia.com

VariZoom

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SONY HDR-TD20V
3D HD Handycam Camcorder

NEW

- Shoot full HD 3D in 1920 x 1080 60p/24p
- Dual 1/4.0" back-illuminated Exmor CMOS sensors
- Dedicated 2D/3D switch
- 3.5" LCD (3D viewing without 3D glasses)
- Optical 10x & 17x extended zoom
- Optical image stabilization
- 5.1 ch surround mic
- Microphone & headphone inputs

20 Mega Pixels

#SOHDRTD20VS

AVCHD 3D

Panasonic HDC-HS900
3 MOS HD Hard Drive Camcorder

- Internal 220GB hard disk drive
- SD/SDHC/SDXC card slot
- 3 x 3.05MP 1/4.1" 3MOS sensors
- 1080/60p recording capability
- Optical image stabilization
- Leica Dicomar Lens
- 3.5" widescreen LCD
- Manual ring over focus, zoom or exposure settings
- 3D recording with optional VW-CLT1 3D lens
- Relay and time lapse recording

14 Mega Pixels

#PAHDCHS900

AVCHD

Canon VIXIA HV40
HDV Camcorder

- 1/ 2.7", 2.96MP HD CMOS sensor with RGB primary color filter
- Frame rates: 60i, native 24p (records at 24p), 24p cinema, and 30p (at 60i)
- DIGIC DV II image processor
- Canon HD 10x optical video lens
- Instant Aufo Focus w/ext. sensor
- SuperRange optical stabilization
- 2.7" widescreen LCD screen • External mic input
- Smooth variable zoom with 3 fixed zoom speeds

3 Mega Pixels

#CAHV40

HDV

SONY HXR-MC50U
Pro Solid State Camcorder

- 1920 x 1080 HD resolution
- 1/2.88" back-illuminated Exmor R CMOS sensor
- 64GB internal memory
- Memory Stick / SD/SDHC media card slot
- 10x wide G series lens
- Assignable manual dial controls
- 3.5" wide LCD
- Geotagging with built-In GPS
- Optical image stabilization

12 Mega Pixels

 # SOHXRMC50U

AVCHD

Canon XA10 / VIXIA HF G10*
Professional HD Solid State Camcorder

- 64GB Internal and Dual SDHC/SDXC card slots with relay recording
- 1920 x 1080 CMOS Image Sensor
- Canon 10x HD Video Lens
- 8-Blade Iris and Manual Focus Ring
- DIGIC DV III Image Processor
- 24Mbps Recording (AVCHD)
- 3.5" High-resolution touch panel LCD and EVF
- Dual XLR terminals

*** Same as XA10 without handle & XLR audio adaptor**

#CAXA10 / #CAHFG10

AVCHD

Panasonic HDC-Z10000
Twin-Lens 2D/3D Camcorder

- Two independent 3MOS sensors
- HD Stereoscopic 3D recording
- Dual Integrated 10x Lenses (12x in 2D)
- Triple manual rings: focus, zoom and iris
- Multi View Coding (MVC) Recording in 3D 1080p60
- 3.5" 3D compatible LCD
- Dual XLR Inputs
- 2D/3D Still Image Recording

#PAHDCZ10000

AVCHD 3D

Panasonic AG-HMC40
3-CMOS Pro HD Solid State Camcorder

- 1080 and 720 HD resolution recording on SDHC cards
- 3 1/4" 3-MP CMOS HD image sensors
- AVCHD MPEG-4 AVC/H.264 encoding
- 10.6-megapixel still capability
- 12x optical zoom
- 2.7-inch LCD monitor
- XLR audio input, HDMI output, USB 2.0

#PAAGHMC40

AVCHD

JVC GY-HM150U
3-CCD ProHD Solid State Camcorder

- Supports 1920/1440 x 1080, 1280 x 720 HD formats in 35, 25, and 19Mb/ps with variable frame rates
- Dual SDHC card slots (loop, pre-record)
- Captures native QuickTime files
- Fujinon 10x HD lens
- Optical image stabilization
- Dual XLR audio, with phantom
- Color viewfinder and large LCD monitor

#JVGYHM150

ProHD

Panasonic AG-HMC80
3-CMOS Pro HD Solid State Camcorder

- 3 1/4.1 CMOS sensors
- 1080 or 720 HD recording
- SD/SDHC media card slot
- 12X optical smooth zoom lens
- High-definition and standard-definition recording
- Pre-record & interval recording
- Optical image stabilization
- Dual XLR/3.5mm mic-in inputs
- HDMI, USB, DV, Component terminals

10 Mega Pixels

#PAAGHMC80

AVCHD

Panasonic AG-HPX250
3-MOS HD Handheld Camcorders

$730 Amex Card Rebate
w/ purchase of AG-HPX250 & 64GB P2 Card (Exp. 3-31-12)

- 3x 1/3", 2.2 Mp CMOS sensor - 18-bit dsp
- 22x optical zoom lens
- 1080p 1080i 60/p30/p24 & 720p60
- Three rings; Manual Zoom, Focus & Iris
- HD-SDI & HDMI output
- 59.94 Hz / 50 Hz switchable
- Slow/quick motion recording mode
- P2 card and DVCPRO mode recording

#PAAGHPX250

DVCPRO HD

SONY HDR-AX2000
3-CMOS AVCHD Flash Camcorder

- Three 1/3" CMOS Exmor sensors
- Records to Memory Stick PRO Duo, SD/SDHC Cards (Dual media slots)
- 1080/60i, and 24p/30p AVCHD recording
- 20x zoom G-Lens (29.5mm wide)
- Zoom, focus, and iris rings
- Dual XLR inputs • 3.2" Xtra Fine LCD
- Low-light (1.5 LUX) capabilities
- CinemaTone Gamma and CinemaTone Color Control

#SOHDRAX2000H

AVCHD

SONY HXR-NX3D1
Professional 3D Compact HD Camcorder

- Dual 1/4" Exmor R CMOS sensors
- Two Sony G lenses (10x optical in 3D)
- 96 GB internal memory
- One SD or Memory Stick card slot
- 3.5" LCD (view 3D glasses-free)
- Full 1920 x 1080 in 3D and 2D
- 3D modes: 60i, 50i, 24p (28 Mb/s)
- 2D modes: 60p, 50p, 60i, 50i, 24p, 25p
- Active SteadyShot in 3D
- Dual XLR inputs (line / Mic / Mic+48V selectable)

#SOHXRNX3D1U

AVCHD

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Canon XF100 / XF105
HD Professional CF Camcorders

- 1/3" CMOS 1920 x 1080 CMOS sensor
- Dual CF card slots
- 50Mbps MPEG-2 recording
- Canon's MPEG-2 4:2:2 color sampling
- 60p/60i, 30p, 24p MXF File Format
- 10x HD zoom lens
- 3.5" 920K dot LCD monitor
- Stereoscopic 3-D recording capabilities
- Dual XLR inputs • Waveform Monitor

XF105 Step-up: HD/SD-SDI, SMPTE Time Code, Genlock

#CAXF100 / #CAXF105

AVCHD

SONY HXR-MC2000U
Shoulder Mount AVCHD Pro Camcorder

- 1/4" 4.2Mp, ClearVid Exmor R CMOS sensor
- Built-in 64GB hard drive
- SD/SDHC/SDXC & Memory Stick slot
- 1920 x 1080i AVCHD (24Mbps)
- MPEG-2 SD Mode (9Mbps)
- 12x wide angle Sony G lens
- Optical SteadyShot stabilizer
- 2.7" ClearPhoto LCD
- Manual lens ring with assignable parameters

4 Mega Pixels

#SOHXRMC2000U

AVCHD

SONY NEX-VG20
Interchangeable Lens HD Camcorder

NEX-VG20H

- Exmor APS-size HD CMOS 16.1 Mp sensor
- Records 1920 x 1080 @ 24p, 60i, 60p
- Memory Stick PRO Duo/SD/SDHC/SDXC card slot
- Sony NEX E series lens mount (A series option)
- 24 Mb/s AVCHD MPEG-4 AAC-LC
- 3.0" LCD and CVF
- Quad-capsule microphone & 5.1 Sound
- Cinematone Gamma / Color • Manual audio control

#SONEXVG20 (Body Only) *#SONEXVG20H with lens*

AVCHD

SONY NEX-FS100UK
Super 35mm Sensor HD Camcorder with Lens

- Exmor Super 35mm CMOS image sensor
- Includes 18-200mm Zoom Lens
- E-mount interchangeable lens mount system
- HDMI 4:2:2 uncompressed
- 1920 x 1080p 28Mbps recording
- 3.5" XtraFine LCD screen
- 1920 x 1080p slow & quick motion
- Record onto SD/SDHC/SDXC, Memory Stick cards, or Sony HXR-FMU128 (optional) • HD MPEG-4 AVCHD format

#SONEXFS100UK ***$5,599.00***

AVCHD

Canon XF300 / XF305
3 CMOS Solid State HD Camcorder

- Record HD 1080/720 onto Compact Flash cards
- 50Mbps MPEG-2 4:2:2 recording
- 3 1/3" 2.37Mp CMOS sensors
- 18x Canon HD L series lens
- DIGIC DV III image processor
- 4" 1.23 Mp LCD monitor
- 1.55 Mp Color EVF
- Over and under crank

XF305 Step-up: HD-SDI Output, Genlock & SMPTE Time Code

#CAXF300 / #CAXF305

HD

Canon EOS C300
Cinema EOS/PL Camcorder Body

NEW

Lens Optional

- Super 35mm CMOS sensor
- 50 Mbps MPEG-2 EF or PL lens mount
- Dual CF card slots
- Canon XF Codec - 4:2:2 color sampling
- Multiple recording formats
- High-resolution VF and 4", 1.23 Mp LCD
- HD-SDI, HDMI, XLR audio
- Canon DIGIC DV III image processor
- High-Speed, Slow-Motion, Time-Lapse and Stop-Motion
- Timecode I/O, Genlock in & Sync out

#CAC300EF / #CAC300PL

SONY HXR-NX5U
3-CMOS NXCAM Flash Memory Camcorder

- Three 1/3" Exmor CMOS sensors, with a ClearVid array
- Capture uses Memory Stick PRO Duo / SDHC Cards, with relay record capability (optional HXR-FMU128 flash memory unit)
- 20x wide G series lens
- HD-SDI & HDMI output, SMPTE Time Code in/out, Dual XLR inputs
- Built-in GPS system • 3.2" Xtra Fine LCD

#SOHXRNX5U

AVCHD

Panasonic AG-AF100
Professional Memory Card Camcorder

$500 Amex Card Rebate Exp. 3-31-12

Lens Optional

- Large 4/3-type MOS sensor
- Micro four thirds lens mount
- Uses still & cinema lenses
- Two SDHC/SDXC memory card slots (Relay Recording)
- AVCCAM Recording 1080i/p, 720p variable frame rates
- Optical low-pass filter
- HD-SDI, HDMI output, Dual XLR

#PAAGAF100

AVCCAM

SONY PMW-EX1R
XDCAM EX Solid State HD Camcorder

$400 Rebate Exp. 3-31-12

- SxS Memory Card Recording w/800Mb/ps Data Transfer
- DVCam Recording • Cache Recording
- Image Inversion Function
- 1/2-inch Exmor 3 CMOS Sensors
- 1080i/720p Switchable
- Multiple Frame Recording
- 14x HD Fujinon Lens
- 3.5" LCD • Full Manual Focus Ring
- Over- and Under-cranking

#SOPMWEX1RQ ***$6,299.00***

XDCAM EX

SONY PMW-EX3
XDCAM EX Solid State HD Camcorder

$500 Rebate Exp. 3-31-12

- Interchangeable 1/2" bayonet lens mount, incl. Fujinon 14x5.8 lens
- 3 1/2" Exmor CMOS image sensors that shoot full raster 1920x1080 hi-def imagery • Recording on removable SxS flash memory cards
- 1080 and 720 shooting modes with selectable bit rates in both PAL and NTSC standards • 3.5" LCD
- 8-Pin remote studio connectivit

#SOPMWEX3Q ***$8,320.00***

XDCAM EX

Panasonic AG-HPX370
3-CMOS Pro Solid State Camcorder

- 10-bit, 4:2:2, native 1080 and 720p HD resolution in variable frame rates
- AVC-Intra 100 and 50 codecs
- Two P2 card slots (hot swapping, loop, pre-record)
- 3 advanced 1/3", 2.2 MP CMOS sensors • HD-SDI output
- 20-bit digital signal processor
- 17x Fujinon HD lens • Built-in scan reverse mode
- Waveform and vector scope display

#PAAGHPX370

DVCPRO HD

SONY PMW-F3K
Super 35mm HD Camcorder Kit

$800 Rebate Exp. 3-31-12

- Exmor Super 35 CMOS image sensor
- Includes 35mm, 50mm, 85mm lens kit
- PL lens mount, 35mm Cine lens compatibility
- 10-bit 4:2:2 HD-SDI
- Two SxS memory card slots
- Interlace/Progressive modes
- D-SDI Dual-link output
- 3D-LINK option

#SOPMWF3K ***$19,890.00***

XDCAM EX

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(continued from page 74)

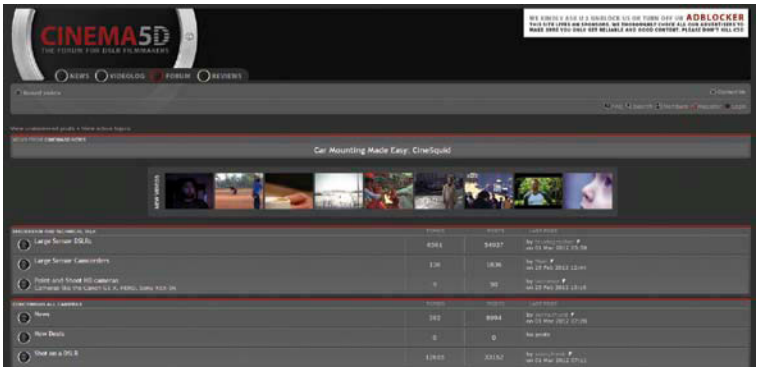
Michael Nankin (*Battlestar Galactica*). In addition to in-person mentorship, the Zicrees offer phone mentoring for those not located in Hollywood.

Marc very recently began a blog on Supermentors.com in which he discusses his experiences in the business. It's always inspiring and informative.

PHILIPBLOOM.NET

Most HDSLR users have heard of Philip Bloom. His site is really an extensive blog, but it contains a wealth of information, opinion and reviews. In addition to the blog, look for insightful content under the Education and Review tabs on the site. Under Education you'll find sections on editing, grading, lighting, DSLR shooting, DSLR workflow and lenses. These articles are primarily video tutorials presented by guests, some by Bloom, and they're all informative. Video is a very powerful educational tool—you're not just reading and looking at still photos; you're hearing, watching and seeing demonstrations in motion, which is an extraordinary way to learn.

BLOG FILMS DSLR EDUCATION REVIEWS EVENTS FORUM
BLOOM
Shooting a drama/ sci fi short "That Day" with the C300 and a look at the Zacuto gear for that camera.



CINEMA5D.COM

Cinema5D is, first and foremost, a forum. I'm always a little skeptical when it comes to forums as they run the gamut from truly extraordinary, where the users are respectful and share useful information, to truly horrible, with trolls, aggressive posters, false information and misleading "experts." As with nearly everything on the internet, you've got to learn to filter out the noise to find the quality material. Cinema5D has some quality posters and a wealth of information aimed specifically at HDSLR users. In addition to the forum, C5D features news (from press releases or reposted from other sites) and reviews (reposted from other site content). **dv**

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PRODUCTION DIARY

STEFAN SARGENT

THE POWER OF *FREE*

What Absolute Garbage! Is This A Piss-Take?

Left: Alison's viral YouTube video

Top Right: Alison wonders why she shot 9:16 portrait instead of widescreen landscape.

Bottom Right: Starman and his $7,400 Panasonic HPX370. He needs more work—even tried Craigslist.

If I could afford it, I'd make only *pro bono* videos. The *clients* are just so grateful. *"I can't thank you enough for this!"* You get free lunches, free tickets to their fund-raising gala. *"Stand up, Stefan, John and Tricia. These are our wonderful filmmakers!"* Applause, cheers, the gala audience goes wild. We're superstars.

After all the praise and thanks, I get a tax credit for making *a donation.*

MY CLIENT, SHE WROTE ME A LETTER

Remember Alison—Alison from my local WildCare non-profit? A year ago she was "The Girl Who Played with 9:16" in my February Production Diary.

Last year she made a YouTube video that went viral—707,000 views and counting!

Now, it's Christmas. She writes me a letter: "Merry Christmas! Sending big warm hugs all around :) Unfortunately, I have some bad news. Here's the word from on high: due to budget constraints, etc., we have decided to recycle one of the previous videos instead of making a new one. I am SO bummed!"

Hi Alison,

*Sh** happens—if there's anything I can do—like, say, knock up a free video—let me know...*

My smooth-talking sales pitch works. She falls for it. We're doing this year's video for free!

I'M COOL, SO FLAME ME

A few months ago, I wrote "How to Find Work" for DV.com. It was in response to a forlorn post by Starman. Here's the gist of my piece:

Starman, you need more and better contacts. Stop thinking of yourself as a cameraman; you're a media wrangler; *you can do everything from Photoshop to Wordpress web sites. Demonstrate how good you are—offer to do it for* free. *If you're good, paying work will follow.*

It's my own M.O.—I've been doing free "get to know me" videos since way back when. Did I get flamed? You bet:

- God, what absolute garbage. Is this a piss-take? Charging nothing is what will destroy the business of the guy you are trying to help. How many freebies will turn into paying jobs? Bugger all.
- What a stupid column! Yeah, right! Do all kinds of incredibly easy things—things anyone could do—and do them all free! He's gonna be busy all right. LOL!
- I think freebies are a waste of time now—the sort of client who will accept a freebie is the sort who will pay peanuts later.

BROADCAST MUSEUM FREEBIE

Ten years ago, I'm invited to a committee meeting. *"How are we going to raise money for the museum?"* I suggest making a video. I'll do it for free.

Freebie finished, it's shown at NATAS events and on local TV. That one *pro bono* has brought in paying, regular work and hundreds of thousands of real, bankable dollars.

How many freebies will turn into paying jobs? Bugger all.

Wrong. I have the 1099s. **dv**

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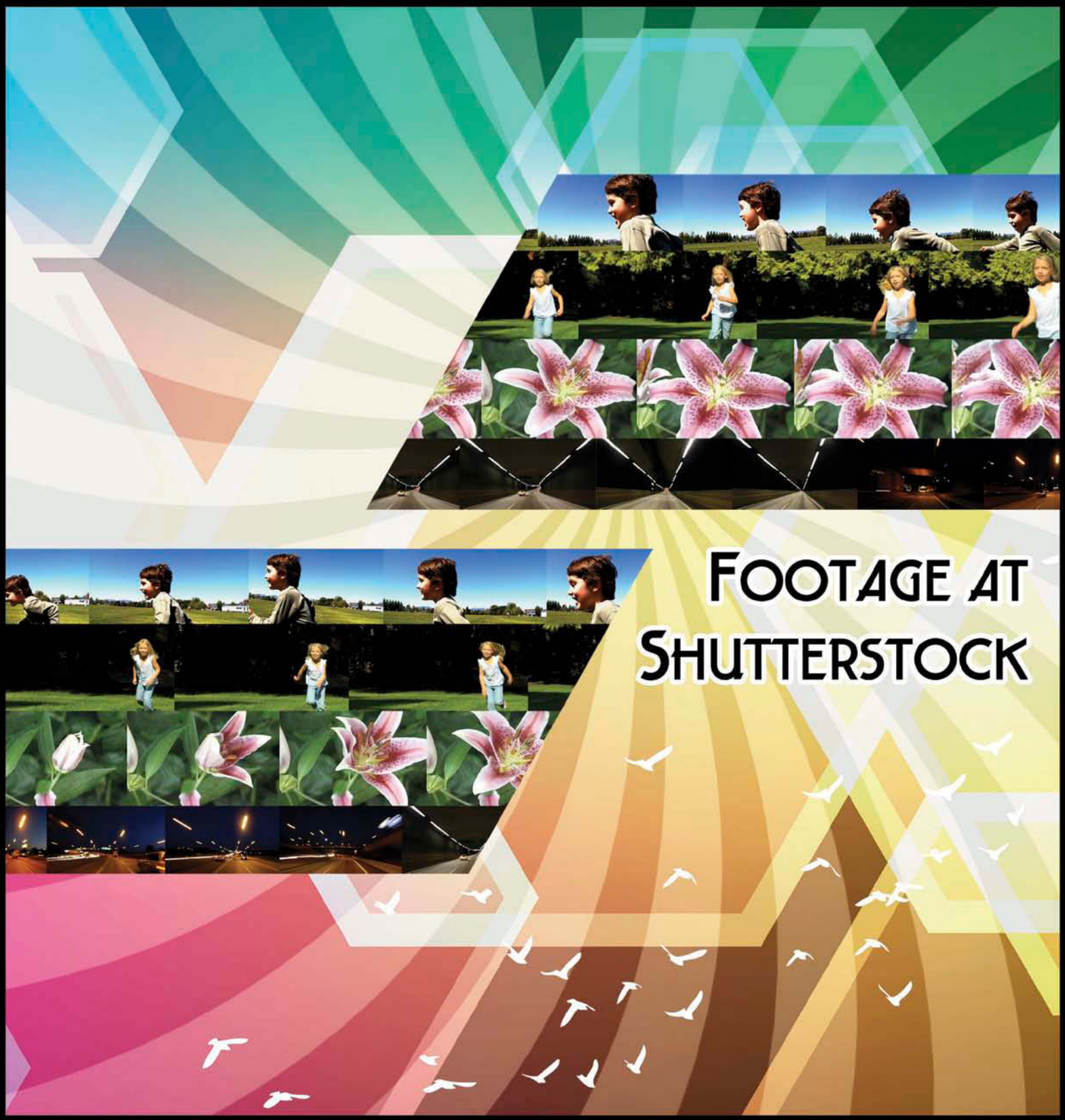

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